OHIO STATE UNIVERSITY
JUN 27 1956
LIBRARY

FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

JUNE, 1956

Tankers Play Big Part in Attack Operations—as in This Jersey Woodland Fire (PHOTO BY FRANK WILGUS)

IN THIS ISSUE...

Costliest Fire Hits Pennsylvania Town

Calling Off-Duty Firemen

Special Feature

TASK FORCES OF TODAY'S FIRE ATTACK—THE TANKER

Swimming is great... but

are you ready

with the most effective artificial respiration known to science?

EMERSON

EMERSON
Resuscitators

"Simplest and Safest"

J. H. EMERSON CO.

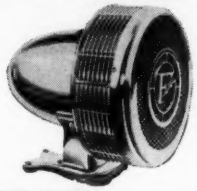
11 COTTAGE PARK AVE., CAMBRIDGE 40, MASS.

FIRE FIGHTING

is an art!

An art is the perfection of knowledge and skill. A profession is the practice of an art.

The Professional Fire Fighter is one who combines knowledge, experience and clear thinking with the skillful use of the tools of his trade. To bring these to a successful culmination, he and his equipment must be transported to the scene quickly, safely and efficiently!



FEDERAL **COASTER SIREN**

GET HIM THERE with a FEDERAL COASTER SIREN and a FEDERAL BEACON RAY light — signals made by professionals, for professionals, to do a professional job!

FEDERAL **BEACON RAY**

FEDERAL SIGNALS have been skillfully conceived and produced by an organization dedicated to **Quality** for over half a century.

FEDERAL SIGN and SIGNAL Corporation

8702 S. State St., Chicago 19, Ill.

FIRE ENGINEERING

VOL. 109 JUNE, 1956 NO. 6

IN THIS ISSUE

FEATURES

Continue Matching Funds—An Editorial 481
By Roi B. Woolley

Task Forces of Today's Fire Attack—Tankers, Tanker-Pumpers and Boosters 482
A Special FIRE ENGINEERING Report

Costliest Fire Strikes Central Pennsylvania Town 488
By Chief John D. Klinepeter

Folding Salvage Covers—The One-Man Throw—Part XV of a Series 490
By Roi B. Woolley

Beauty and Utility Feature New West Orange Fire Station 493

DEPARTMENTS

Our Readers Write Us 499

What's New Among the Manufacturers 503

Short Cuts and Gadgets 507

False Alarms 508

What's Burning? 510

Among the Buffs 513

The Round Table 516
Calling Off-Duty Firemen

World-Wide Fire News 519

Convention Dates 523

Questions and Answers 526

Persons in the News 528

Obituaries 529

The Watch Desk 538

Published the fifteenth of each month by the Case-Shepperd-Mann Dept., Business Papers Division, The Reuben H. Donnelley Corp., 305 East 45th St., New York 17, N. Y., David L. Harrington, Chairman of the Board; Gaylord Donnelley, Vice Chairman of the Board; Curtiss E. Frank, President; Albert M. Andersen, Executive Vice President; Harold P. Harper, Vice President; Donald R. Arnold, Vice President; Hamilton B. Mitchell, Vice President; Giles B. McCollum, Vice President; Edward A. O'Rorke, Assistant Vice President; Karl G. Clement, Controller; James H. Evans, Secretary-Treasurer. Edward B. Wintersteen, Executive Manager, Business Papers Division. Publication Office: 109 West Chestnut St., Lancaster, Pa. Address all correspondence to 305 East 45th Street, New York 17, N. Y.

Eastern Representatives, Alfred J. Haughton, William J. Gibson; Chicago: 8 So. Dearborn St., L. M. Roche, Richard H. Baum; San Francisco: Mills Building, Duncan A. Scott & Co.; Los Angeles: 6000 Miramonte Blvd., August Haurin.

Subscription Rates: U. S. and Canada, $3.50 a year; Pan-American and Foreign, $4.50; Single copy, 40¢.

Printed in U. S. A. Second class mail privileges authorized at Lancaster, Pa., on January 27, 1956.

Contents of this issue copyrighted 1956, by The Reuben H. Donnelley Corp.

Postmaster: Mail Form 3579 for undeliverable copies to 305 East 45th St., New York 17, N. Y.

A MANY SPLENDORED THING

Listening to that most popular song "Love Is a Many Splendored Thing," we somehow likened it to the fire service.

To us, prosaic and factual as some of us are, the fire service is nevertheless, a many splendored thing.

A great and growing industry, profession, science—call it what you will—with over a million souls laboring in its calling! With all the facilities that science and money can create to support them in their endeavors! With all the hopes and prayers of countless millions who know the ravages of fire, because they've experienced it, to spur them on in their worthy endeavor!

To suppress deadly, destructive, devastating fire—the worst kind of death, the worst kind of economic cancer that is eating away the nation's patrimony! Could there be a more worthy objective than this? Could this million and more army of fire fighters want for greater inspiration than this, their calling?

The fire service is indeed a many splendored thing. It can only be kept alive and it can only progress because those who are of it, and in it, believe so devoutly in their cause.

The publishers of FIRE ENGINEERING are proud to be so closely associated with such a worthy cause—and such an outstanding army of crusaders.

The Publishers

FIRE ENGINEERING—A CONSOLIDATION OF FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION AND FIRE SERVICE

I. HERBERT CASE
General Manager

FRED SHEPPERD
Editorial Director

ROI B. WOOLLEY
Editor

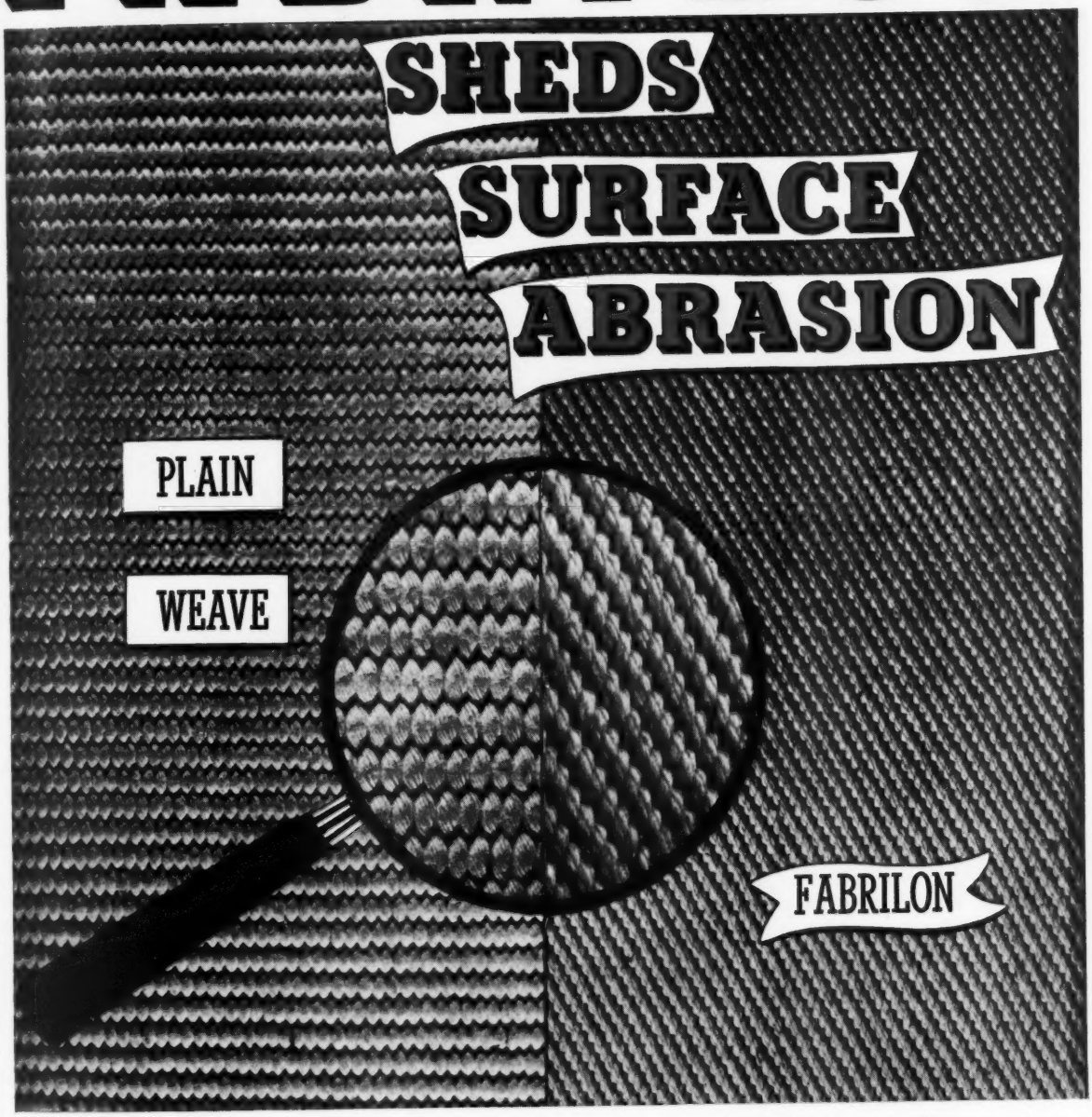
DONALD M. O'BRIEN
Assistant Editor

D. FERGUSON
Managing Editor

KARL M. MANN
Advertising Director

MEMBER
Audit Bureau of Circulations
Associated Business Publications

FABRILON



In FABRILON the remarkably fine weave presents a *long lasting surface* against abrasion, snagging and other types of service wear. The closely woven *diagonal or twill* stitch passes along surface friction like the runners of a sled. This means *less wear and drag* when the hose is pulled over the ground or around obstacles. It also means *smooth texture, ease of handling* and *efficient loading* in the hose bed.

FABRIC FIRE HOSE COMPANY

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

SANDY HOOK CONNECTICUT

designed for mobility and instant action

NEW! the "LITTLE BEAN" high-pressure fog fire-fighter

Here's the compact new unit that puts two lines of John Bean High Pressure Fog into instant action — either while stationary or on the run. Built for speed, compactness and easy handling, it is ideal for the fast knockout of forest, grass and brush fires — for airport protection — for any type of fire where minutes count.

Both municipal and rural fire departments are using it with outstanding success as an economical general purpose unit. City departments find it ideally suited as a "first out" truck, particularly for still alarms. It can also be used for industrial applications.

See the "Little Bean" in action and you'll see a score of your fire fighting problems solved.

SPECIFICATIONS

HIGH PRESSURE PUMP: 40 GPM with 800 PSI at the pump; 600 PSI fog at both guns simultaneously. Automatic valve; 1000 P.S.I. pressure gauge.

DRIVE: Transmission power take-off. Operates pump at full pressure with truck in motion.

TANK: 225 gallon tank, cross-baffled to prevent water surge. Copper-bearing steel with corrosion-resistant coating. Five-inch filler opening with removable top for easy access to all portions of tank.

HOSE: Two 100-foot lengths of high pressure hose on each reel. Swivel connections to gun and reel. Suction hose in one 20-foot length (or two 8-ft. lengths) 2-inch non-collapsing type, with strainer.

REELS: Two drum-type, spring-loaded, high pressure reels, 200-foot capacity each. Horizontal and vertical roller guides for fast, easy unreeling and hose pick-up.

GUNS: Two patented Bean High Pressure Fog Guns with control pattern from fog to straight stream.

ACCESSORIES: A full range of accessory items are available to meet your particular requirements.

CHASSIS: Apparatus can be mounted on most standard one-ton truck chassis.

BODY: Built in as an integral part of the truck chassis with full-length running boards and rear platform constructed of approved, non-skid tread plate.
Side and rear panels are solidly constructed of 12 gauge, stretcher-level body steel.

A John Bean representative can arrange for a demonstration of the "Little Bean" Fire Fighter in your community (a few localities excepted). Write for details.

For details on John Bean's complete line of Fire-Fighters, ask for Catalog L-1171.

JOHN fmc BEAN

FOOD MACHINERY AND CHEMICAL CORPORATION

Lansing 4, Mich. San Jose 1, Calif.

ORIGINAL HIGH-PRESSURE FOG FIRE-FIGHTERS

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

B.F.Goodrich

B. F. Goodrich hose handles easier, gets into action faster

THE amazing light weight and flexibility of B. F. Goodrich Fire King hose makes it a favorite with firemen everywhere. The chief in Natchez, Miss., where this picture was taken, says, "Our men compete with each other to see who is going to work on the truck that has the Fire King hose —they say it handles so much easier than other hose."

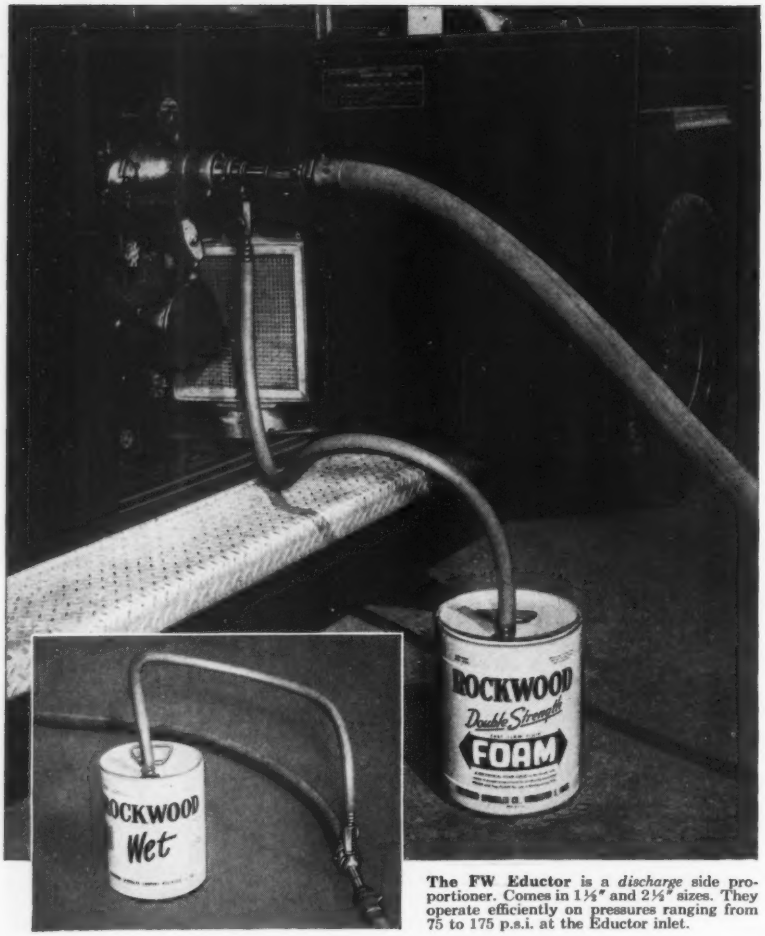
B. F. Goodrich Fire King is 22% lighter than ordinary hose, and 50% stronger. It is tested to 600 pounds pressure to handle increased pumping pressures and to resist sudden pump surges. Fire King is made with Dacron chemically-produced fiber as "filler cords".

And now, for only pennies more per foot, you can add a *new* factor in safety and long life. The new Superseal protection, introduced by B. F. Goodrich in 1955, has virtually eliminated mildew as a hose killer. Exacting tests prove that it makes fire hose 10 times more resistant to mildew and rotting. Unlike ordinary treatments that just coat the surface of hose, the Superseal solution penetrates every cord in both the inner and outer jacket.

When you want hose that will last longer than any fire hose ever sold, get B. F. Goodrich Fire King with Superseal protection. Your B. F. Goodrich fire hose distributor can tell you more about it, or write *B. F. Goodrich Industrial Products Company, Dept. M-645, Akron 18, Ohio.*

B.F.Goodrich

INDUSTRIAL PRODUCTS

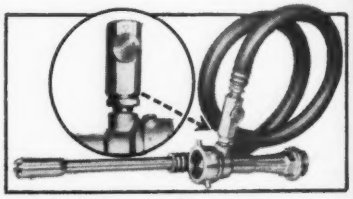


The FW Eductor is a *discharge* side proportioner. Comes in 1½" and 2½" sizes. They operate efficiently on pressures ranging from 75 to 175 p.s.i. at the Eductor inlet.

FFF Nozzle comes with Foam screen and solid Foam stream shaper.

SG-60 Nozzle with FF extension unit.

Rockwood Eductors are designed for use with both the Rockwood FFF nozzle and the SG-60 nozzle with FF extension unit. SG-60 is an all-purpose nozzle that fights fires 5 ways — high velocity WaterFOG, low velocity WaterFOG (with applicator), FogFOAM, solid stream of water or of FOAM, FF extension unit discharges Rockwood FOAM in a solid stream or as FogFOAM, and covers large areas at one time.



The Variable FW Metering-Check Valve on the Rockwood Eductor is highly versatile, and is furnished with each FW Eductor. It incorporates both the Metering Valve and Ball Check Valve in one unit, and meters liquid into the hose line in any proportion from 1% through 6%.

Two for the road!

Protect against flammable liquid fire due to tank truck accidents

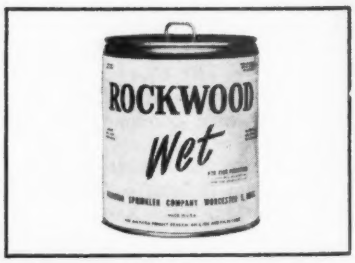
With more traffic on congested highways, more filling stations, more and more gasoline tank trucks in daily service, *your* municipality is in greater danger of a flammable fuel fire than it has ever been before. A sudden crash of a tank truck passing through your city streets tomorrow could confront you with a difficult-to-control flammable liquid fire.

The use of Rockwood FW Eductor reduces the danger of disastrous losses due to such a fast-spreading fire. Developed for operation with Rockwood's FFF nozzle and SG-60 nozzle with FF extension unit, the FW Eductor introduces Rockwood regular 6% FOAM liquid, Double-Strength 3% FOAM liquid or WET (1% or 2%) into the hose line, quickly controlling and extinguishing flammable liquid and other fires.

Rockwood FW Eductor is the simplest form of proportioning you can buy. Ideal for municipal fire departments, oil refineries and industrial plants, it can be attached between discharge gate of a fire truck and hose line, or between two lengths of hose.

Be prepared. Put this great fire fighter to work for you. Specify Rockwood FW Eductor when you order a fire truck.

Rockwood Double-Strength Foam Liquid, 3 parts mixed with 97 parts water, forms a solid FOAM blanket that quickly re-seals itself. Available in 5-gallon or 50-gallon drums.



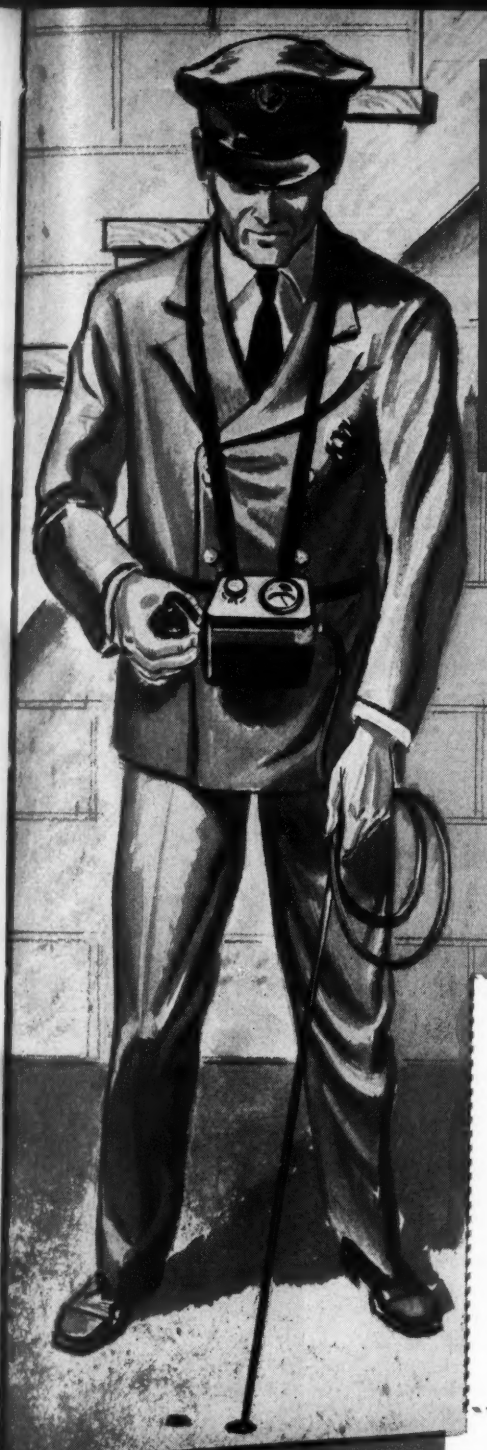
Rockwood WET, 1 part mixed with 99 parts water, increases penetration and extinguishing action of water. Excellent for deep seated fires or where water is scarce. Can be used in proportions of 1% or 2% by volume for Class A and B fires. Available in 5-gallon cans or 50-gallon drums.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

PORTABLE FIRE PROTECTION DIVISION • 1541 Harlow Street, Worcester, Mass.

DISTRIBUTORS IN ALL PRINCIPAL CITIES



Here's how this M·S·A "Mechanical Nose" sniffed out a fire before it started!

Reports of unexplained gasoline odors in a basement room of the 12-story Minneapolis Grain Exchange sent city Fire Department officials into action.

Order number one from Charles A. Johnson, fire prevention chief, cut off electrical equipment in the room—prohibited smoking in the area.

Preliminary inspection traced the gasoline vapors to a hollow stair-supporting post.

A hole was knocked in the stair wall and the air tested. The M.S.A. Explosimeter reading showed 10%. (A reading of 100% indicates an explosive mixture.)

Readings were taken from a hole in the floor—60%! Investigators, using the Explosimeter, began a search that wound through a four block area, and ended 150 feet from the Grain Exchange. Here, two 550-gallon gasoline storage tanks, in poor condition and leaking badly, were uncovered. The escaping gas, following the rock stratum, had found its way into the Grain Exchange. The tanks were removed, and a potentially disastrous explosion and fire was prevented.

THE M.S.A. EXPLOSIMETER

This device has proved its accuracy during use in routine inspections and in investigations of reported gas odors. In these services, the Explosimeter is helping Fire Departments everywhere do a better job of preventing fires caused by explosive gases and vapors. Its operation is simple, takes no special training. It is portable, light to carry, easy and inexpensive to maintain. Get the story today on the M.S.A. Explosimeter. Write, or call.

M·S·A
SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES COMPANY

201 NORTH BRADDOCK AVENUE, PITTSBURGH 8, PA.

At Your Service: 76 Branch Offices in the United States

MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED

Toronto, Montreal, Calgary, Edmonton, Winnipeg, Vancouver, Sydney, N.S.
Representatives in Principal Cities in Mexico, Central and South America
Cable Address "MINSAF" Pittsburgh

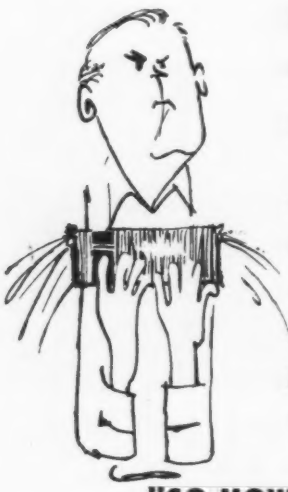
Call the M.S.A. man on your every safety problem . . . his job is to help you.

THE HOSE RECORD CARD IS *Bi-Lateral's*® BEST *testimonial*

"THE PROOF IS IN THE CARDS!"

BI-LATERAL *INVITES* COMPARISON!

IN FACT, BI-LATERAL FURNISHES YOU THE *MEANS* TO PROVE IT TO YOURSELF!



"SO HOW CAN I TEST A SAMPLE?"

With every bid, we get a hose sample a foot long. They all look pretty, but what can I do with it? *I depend on a record of reliability*—and Bi-Lateral has *proved* to be the *best* fire hose in the world! In fact, Bi-Lateral even furnishes *free* record cards so *every* fire house can have the same proof! Shows they're not afraid of comparisons, doesn't it?

Bi-Lateral! *First* to recognize the need for and construct fire hose with the Bi-Lateral feature.

First to change pin lug to rocker lug couplings.

First to offer FREE fire hose record cards to fire depts.

Write for *your* cards today!

Bi-Lateral FIRE HOSE CO.

20 N. WACKER DRIVE
CHICAGO 6, ILLINOIS

Custom-Built to meet your needs

BASIC SPECIFICATIONS OF HOWE DEFENDER CHASSIS

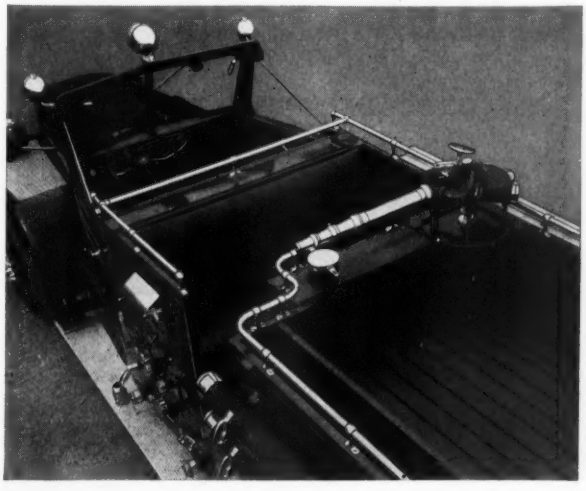
ENGINE—6 cylinder Continental, Waukesha or Hall-Scott
IGNITION—Dual, with 2 spark plugs per cylinder
STEERING—Ross cam and lever
TRANSMISSION—Fuller 5-speed forward
PROPELLER SHAFT—Spicer oversized for F.D. service
FRONT AXLE—Timken I Beam
REAR AXLE—Timken full floating. Ratio specially engineered for service requirements
CLUTCH—Lipe-Rollway oversized for F.D. service
BRAKES—Service-hydraulic with booster on 4 wheels. Auxiliary mounted on propeller shaft back of pump
TIRES—9.00 x 20 duals rear

FIRE EQUIPMENT

PUMP—Waterous with famous split case for easy servicing
BOOSTER TANK—Capacity optional. Standard construction completely removable top, made of steel with highest percentage copper content available, coated with 3-coat vinyl resin plastic
HOSE BODY—Heavy gauge stretcher leveled steel. Chromed hand rails side and rear
COMPARTMENTS—Full width over pump and large tool box. Others to order
WARNING SIGNALS and LIGHTING EQUIPMENT—Flasher siren, 2 hoselights, 2 spotlights, 2 headlights, pump panel light, 2 hand lanterns
FIRE EQUIPMENT—Set of ladders, 2 extinguishers, pump suction hose and fittings, axe, crow bar, pike pole, hose reel, 150 ft. booster hose and nozzle
FINISH—F.D. Red Lacquer, Gold Leaf lettering and striping

The 5-man, semi-cab of Aiken's new HOWE DEFENDER is shown in close-up at right. Rear seat takes three men off the running board for important riding comfort and safety. This is a triple combination pumper with 240 HP Waukesha engine. Its auxiliary 100 gallon power take-off pump works while truck is rolling.

WHEN you order new equipment, choose an experienced, old-line company building the latest and best apparatus on any chassis specified AND producing custom-built pumpers—the famous HOWE DEFENDERS! If you have a special problem, such as water supply, hilly terrain, serving of both city and suburban areas, a HOWE DEFENDER built to meet your individual needs is the answer. DEFENDERS are efficiently serving in such widely separated centers as Dallas, St. Louis, Fort Lauderdale, Muncie, Ind., Jamestown, N. Y. Let our engineers recommend the pumper to provide you with dependable, adaptable equipment.



HOWE

Member FAM (Fire Apparatus Manufacturers Association)

HOWE

"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

Dept. FE66, 1400 W. 22nd St., Anderson, Ind., U. S. A.

New fire-fighting nozzle gives high or low velocity jet of foam. Now widely used.

This is the type of fire that is

KILLED FAST BY

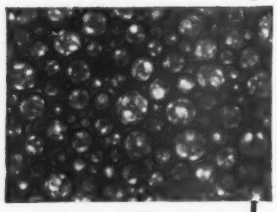
Nicerol

Foam Blanket— AND WILL STAY DEAD

A dense blanket of adhesive, cohesive foam which actually follows the fire, stifles it, outlasts it and prevents flash-back — that's Nicerol, most widely used foam compound in the world.

Nicerol, with pH 6.8 to 7.3, ensures freedom from corrosion in equipment and storage drums. It does not form sludge. 3 gallons of Nicerol NLXX (3%) Foam Liquid with 100 gallons of water, fresh or salt, forms 1,000 gallons of foam.

It can cost you nothing to test Nicerol this way. Write the one word SAMPLE on your official stationery and we will send you, freight pre-paid anywhere in the U.S.A. or Canada, a 5 gallon can of Nicerol NLXX (3%) for $20 C.O.D. (or please enclose draft). The $20 cost of this sample will be deducted from your first 100 gallon or larger order for Nicerol.

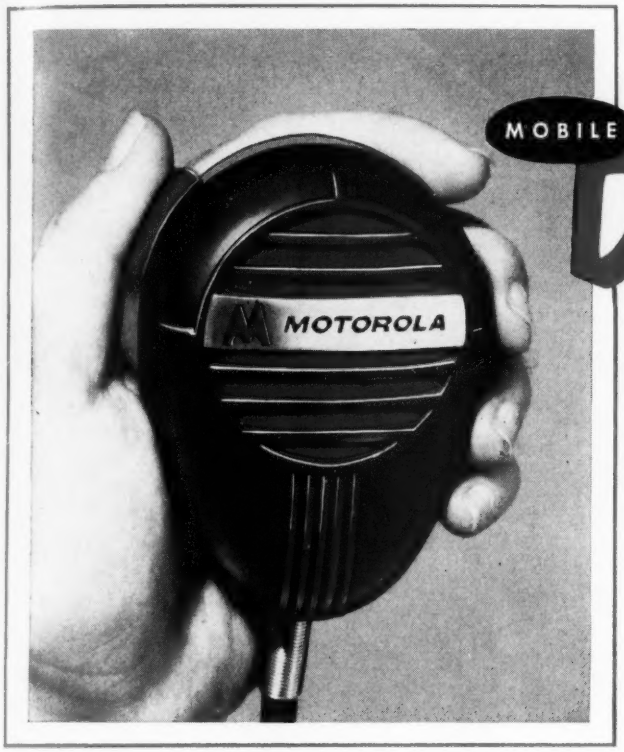


Phot micrograph X30, showing closely-knit bubble blanket of Nicerol foam, strongly cohesive, adhesive, outlasting the fire.

Full technical and commercial details available from:—

GEORGE REYNOLDS & ASSOCIATES, P.O. BOX 395, THORNWOOD, NEW YORK.
THE GENERAL DETROIT CORP., P.O. BOX 263, DETROIT 32, MICHIGAN.
THE GENERAL PACIFIC CORP., 8740 WEST WASHINGTON BLVD., CULVER CITY, CAL.

an important new "PLUS FACTOR" of the Motorola Twin-V Radiophone



MOBILE

TRANSISTORIZED DYNAMIC MICROPHONE

Unprecedented voice clarity for mobile radio transmission

- true moving coil dynamic characteristics
- transistor preamplifier built-in
- printed circuit
- all-metal housing
- retains popular size and shape
- superior voice reproduction
- unexcelled reliability.

Twin-V

The new transistorized dynamic microphone, or the dual purpose dynamic "Speaker-Mike," is *optionally* available with Motorola's "TWIN-V" Radiophone—the world's finest FM 2-way mobile radio unit . . . incorporating many *exclusive* features, including universal 6/12 volt operation, Sensicon receiver, Permakay Filter, and Instantaneous Deviation Control.

Motorola's new transistorized dynamic microphone provides *mobile* transmission quality comparable to that of the base station. Unexcelled voice clarity, crispness, and intelligibility are yours in this newest Motorola *first*.

Also available as *"SPEAKER-MIKE"*

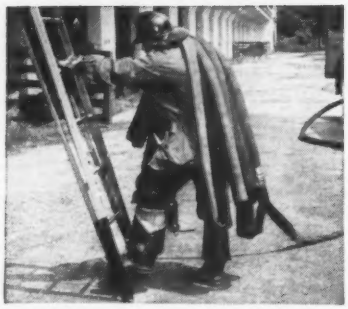
The new microphone can be furnished as a dual-purpose "Speaker-Mike" which functions as a full output communications-type *loudspeaker*, as well as a dynamic microphone. It can be conveniently mounted, or held near the operator's ear to overcome high ambient noise levels.

You can have either of these outstanding microphones as replacement items, or as *optional* equipment with new Motorola "TWIN-V" Radiophones. The transistorized, dynamic microphone, with its *popular palm size*, is directly interchangeable with Motorola carbon models now in use. The "Speaker-Mike" version requires a simple modification kit for replacement use in existing equipment.

Immediately available. Write, phone or wire today, or contact your local Motorola Radio Communications Engineer.

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.

A SUBSIDIARY OF MOTOROLA, INC., 4501 AUGUSTA BOULEVARD, CHICAGO 51, ILLINOIS



IN COLUMBUS, O., the stronger hose made with "Dacron" is preferred because it needs less maintenance.

IN MIAMI, FLA., "Dacron" is specified as filler cord because it resists weakening by mildew . . . a real problem in semitropic climates.

IN AUGUSTA, GA., hose made with "Dacron" is used "because it's easier to coil and rack . . . dries faster, too."

SCHENECTADY, N.Y., Fire Department averages two calls per day . . . reports, "Hose made with 'Dacron' gives better all-around performance."

Schenectady Fire Department reports:

"Hose made with DACRON is lightweight...gets into action fast"

REG. U. S. PAT. OFF.

The Schenectady Fire Department uses 5,000 feet of hose made with "Dacron"*. Like other fire chiefs across the country, Chief Edward M. Moffett reports better all-around performance from fire hose made with "Dacron" polyester fiber. Used as the load-carrying "filler" cord that reinforces the hose, this Du Pont fiber permits a hose that's light and flexible—yet *stronger* than ordinary hose of the same construction.

Du Pont makes "Dacron" and supplies the yarn to hose manufacturers. The combination of the unusual properties of "Dacron" plus hose manufacturers' skill has resulted in a superior fire hose. Hose made with "Dacron" is made by all leading fire-hose manufacturers. The next time *you* need hose, be sure it's made with "Dacron". E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

**"Dacron" is Du Pont's registered trademark for its polyester fiber.*

ADVANTAGES OF FIRE HOSE MADE WITH "DACRON":

- Lighter
- Stronger
- Dries faster
- More flexible
- Cuts loading time
- Saves space

For Better All-Around Performance Specify Hose Made with "Dacron"

POLYESTER FIBER

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

MEMO

TO: Mrs. O'Leary
SUBJECT: Publicity on cow

1. While your cow is generally credited with kicking up a ruckus that started the Great Chicago Fire of 1871, it is extremely doubtful whether such incendiary activity would get you any notices at all in 1956.

2. Today, as a result of its continuing program of equipment modernization, the Chicago Fire Department is at its all-time peak of emergency readiness. The ten new Mack B95 1000 gpm triple combination pumpers shown here are typical of the 93 high-efficiency, high-capacity Macks put in service by Chicago in the past 10 years.

WHATEVER YOUR APPARATUS NEEDS, Mack has the answer . . . and it's the smoothest operating, best designed, easiest maintained equipment that can be bought! Behind every Mack stands the most extensive research and engineering, the highest production standards in the industry . . . and the *only* completely integrated nationwide parts and service facilities! Get full details from your Mack Branch or Distributor. Mack Fire Apparatus, Plainfield, N. J. In Canada: Mack Trucks of Canada, Ltd.

MACK . . . *first name for* FIRE APPARATUS

4009

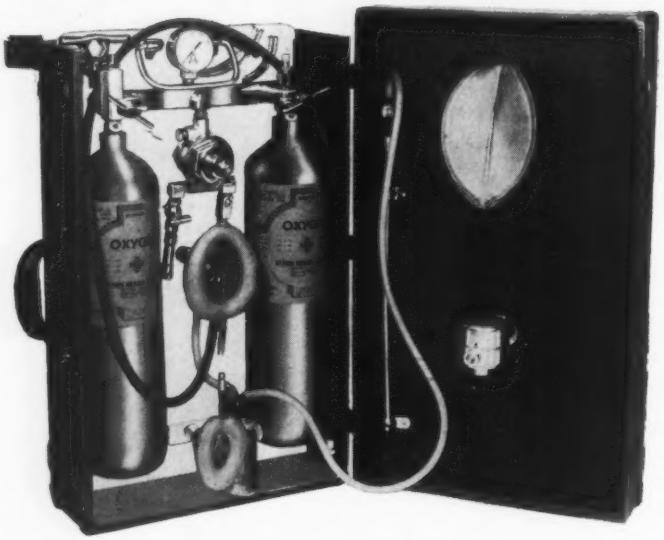
COMPLETE LINE OF PUMPERS — 500 to 1250 GPM . . . SQUAD AND HOSE WAGONS . . . 65', 75', 85' AERIALS . . . COMBINATION LADDER TRUCKS

REVIV-A-LIFE

RESUSCITATOR — ASPIRATOR — INHALATOR

equipped with BAER MODEL CONTROL VALVES

- ***Safe and dependable—yet simple, self contained, light weight, for ease of operation.***
- ***The only Resuscitator with Venturi Action which eliminates spring and toggle mechanism and reduces service requirements.***



Easy to Carry—

Mounted on a removable aluminum panel, Reviv-A-Life weighs only 35 lbs. including two "D" tanks (45 lbs. in carrying case) —can be carried by one hand.

Superior Features and Quality at Moderate Cost

The Reviv-A-Life Resuscitator is an automatic breathing machine which will rhythmically inflate and deflate human lungs with safety.

All oxygen controls to regulate resuscitation or inhalation are in the control valve which may be held in the hand. This feature enables the operator to operate the machine at any distance from the supply tanks—important when the resuscitator must be used in limited space.

No complicated adjustments to confuse the operator.

Instant change from resuscitation to inhalation and back–aspiration immediately available with a simple twist of T cock.

• Attractively Priced **• Satisfaction Guaranteed**

Sold through dealers and equipment manufacturers. Write for literature, prices and name of nearest dealer. No obligation.

Manufactured by

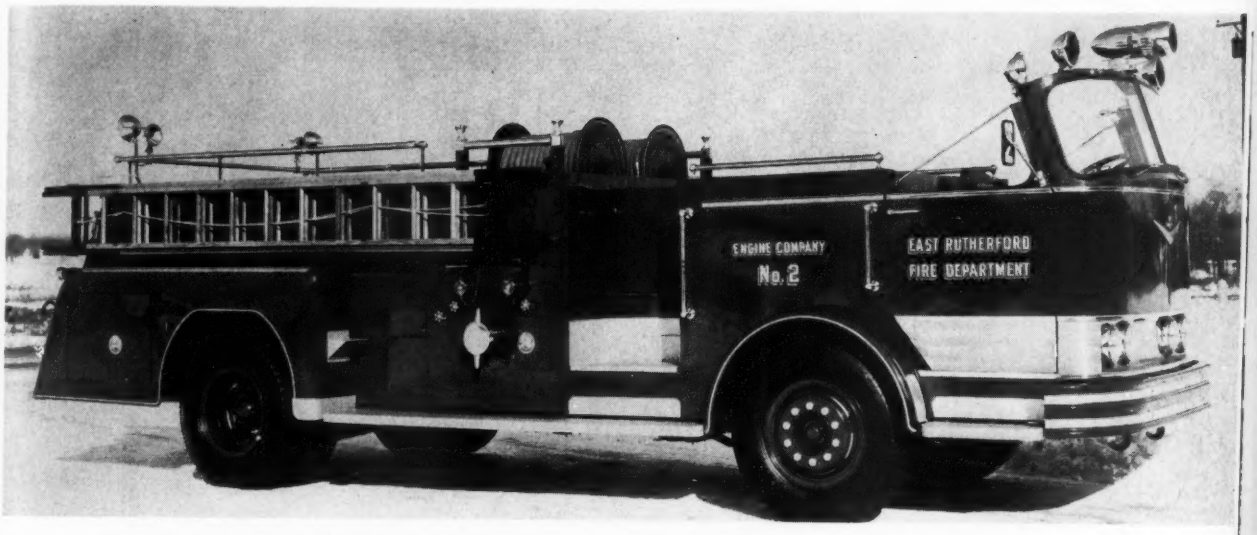
MIDWEST OXYGEN EQUIPMENT CO.

Exclusive licensee under patents pending

1664 West Ogden Ave. **MOnroe 6-2330** **Chicago 12, Illinois**

REPAIRS ACCESSORIES REFILLS TANK TESTING

THE NEW Ahrens-Fox FIRE APPARATUS BY BECK



HAROLD J. HOLLENBECK
MAYOR
TELEPHONE: WEBSTER 9-0262
RESIDENCE: GENEVA 8-0382

EDWIN T. MAHER
BOROUGH CLERK
TELEPHONE: WEBSTER 9-0262
RESIDENCE: WEBSTER 9-5833

BOROUGH OF EAST RUTHERFORD
BERGEN COUNTY, NEW JERSEY

March 31, 1956

C. D. Beck & Co., Inc.
Manufacturers of Ahrens Fox Apparatus,
Sidney, Ohio.

Gentlemen:

We are very pleased with our new Ahrens Fox Centrifugal Pumper which we ordered from your Company in October, 1955 and which was delivered ahead of schedule, in January, 1956.

We wish to congratulate your Company for the fine engineering and modern design of this apparatus as well as for the excellent workmanship throughout. It has been officially tested and has met all pumping tests and road tests with flying colors.

This new cab-forward design, with its powerful heavy duty motor, is beyond any doubt, the most modern in fire apparatus today, featuring better vision for the drivers, better manuverability for short turning, better weight distribution and all around better performance.

We have several Ahrens Fox apparatus in service and the records of these units speak well for your pumpers which have never failed to answer an alarm and service given has been 100%.

In accepting this custom built, modern pumper with great pride and satisfaction, we heartily recommend the Ahrens Fox to any Fire Dept. who is in the market for a new pumper.

Sincerely Yours,

East Rutherford, N.J. Fire Dept.

Joseph Donaldson
Fire Commissioner.

Harold Zilt
Fire Chief

Charles G. Lynch
1st. Asst Chief

For Dependable Fire Protection
East Rutherford, N. J.
Relies on the New AHRENS-FOX

CUSTOM DESIGNED . . . . . .
CUSTOM ENGINEERED . . . . . .
CUSTOM BUILT FIRE APPARATUS

AHRENS-FOX is the answer to your fire equipment needs.

AHRENS-FOX pumpers are available in sizes ranging from 500 to 1500 GPM.

Write, wire, or phone for complete detailed specifications and quotations on your fire equipment needs.

C. D. BECK & COMPANY, INC., SIDNEY, OHIO, U.S.A.

Protect your plant with the same Ansul extinguishers that guard this big steel mill

Well-planned safety and fire prevention programs are doing their share to protect lives, property and production schedules at the Great Lakes Corporation, Detroit, Mich., division of National Steel Corporation. Ansul fire extinguishers are playing a part in this successful program.

Your safety program deserves the best in fire protection. Remember, fire doesn't give you a second chance. Here are three big reasons why Ansul dry chemical extinguishers can take the worry out of your fire protection program and help you maintain a safety record to be proud of:

First. Ansul extinguishers are *dependable.* They are always ready for action, even under severe exposure conditions. Weather-tight construction assures this dependability. *Second.* Ansul extinguishers are *effective.* Patented nozzles deliver either a straight or fan stream, depending upon the hazard. This is an Ansul exclusive for more effective fire control. *Third.* Ansul extinguishers are backed by a *five-year warranty.* This is the best way we know of saying that Ansul extinguishers are the finest of their kind made anywhere. No other manufacturer offers this important warranty.

Get in touch with your local ANSUL MAN through the yellow pages of your phone directory, or write direct to ANSUL CHEMICAL COMPANY, DEPT. FE-6, MARINETTE, WISCONSIN.

ANSUL

Warren, R. I. goes WARD LaFRANCE

Adds Model 85T to its fire-fighting forces

MEET THE NEWEST MEMBER of the Warren, R. I. fire department! It's Ward LaFrance Model 85T . . . a triple combination pumper especially designed for village, town and suburban use.

Fast, flexible and tough, this Ward LaFrance pumper will give any community . . . yours included . . . long reliable service at moderate cost. The 85T is built to climb hills at high speed, is thoroughly at home when the going gets tough summer or winter.

Its big, powerful, seven-bearing crankshaft motor will withstand long hours of heavy pumping loads. Standard equipment consists of 250 gallon capacity booster tank, 150' of booster hose, Waterous 750 g.p.m. pump. Call in the Ward LaFrance representative in your area...let him help you select equipment that suits your community's needs.

NEW ENGLAND AGENT:
Ira A. Ballou, Jr.
178 Adams Point Road
Barrington, R. I.

WARD LA FRANCE TRUCK CORPORATION

Fire Apparatus Manufacturers for over 38 Years

GENERAL OFFICE & FACTORY: Grand Central Avenue, Elmira, N.Y. Tel. 3-5631. **DIRECT FACTORY BRANCH:** 139th Street & Bruckner Blvd., New York 54, N.Y., Tel. CYpress 2-3300. **EXPORT:** Ward LaFrance International, Inc., Elmira, N.Y., U.S.A., Cable Address: "Wardtruck"

MIDWESTERN

Safety Clothing for FIREMEN

The Original
STRIPED SAFETY COAT

- ☆ ***New Yellow Rubber Stripes!***
- ☆ ***Maximum Visibility!***
- ☆ ***Maximum Durability!***
- ☆ ***Exclusive Safety Features!***

YOU deserve the BEST PROTECTION OBTAINABLE for your hazardous work of protecting life, and property against fire. The Mackinaw Safety Coat with new yellow stripes is the answer! Highly visible stripes are rubberized as part of the material . . . not painted, glued or sewed on. Tests indicate that the new yellow, like black, retains its natural color and has the same durability.

There are many imitations but no substitute for the superior quality, design, fabric texture and safety features you get by specifying MIDWESTERN!

MIDWESTERN
COMBINATION SAFETY SUIT

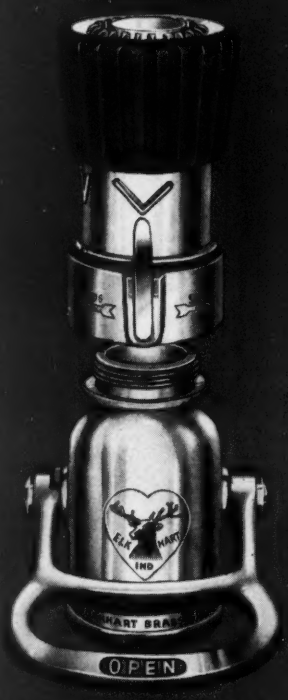
The Midwestern Rubberized Coat and Bunker Pants make it easy for firemen to keep both warm and dry even in the most severe weather. Close fitting collar and elastic inner sleeve keep out sparks and water. Detachable wool lining. Pants have double-stitched seams, reinforcing rivets at points of strain, large roomy pocket space.

For complete information on our full line of safety clothing for firemen, see your Midwestern dealer. A letter to the factory will also bring you literature and materials for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Safety Coats**



now... you can shut off nozzle...remove tip...add hose... re-attach tip with ELKHART'S

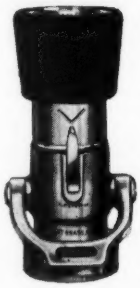
"ST" SERIES SELECT-O-STREAM MYSTERY NOZZLE

INCREASED CAPACITY: 100 lbs. nozzle pressure—30° fog—1½" discharges 125 G.P.M.—2½" discharges 275 G.P.M. (No change 1" size).

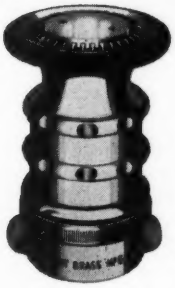
LARGE WATERWAY: Ball shut-off with full 1⅜" waterway —reduces friction loss—increases operating efficiency.

EXCLUSIVE: Embossed braille-type symbols for pre-selection of stream.

ADAPTABILITY: Detachable shut-off allows shutting down line, without disturbing hydrant or pumper, removing tip—adding an extra length of hose—attaching SOS tip.



SELECT-O-STREAM
with integral shut-off
1" S-200 S.O.S.
1½" L-200 S.O.S.
2½" 200 S.O.S.



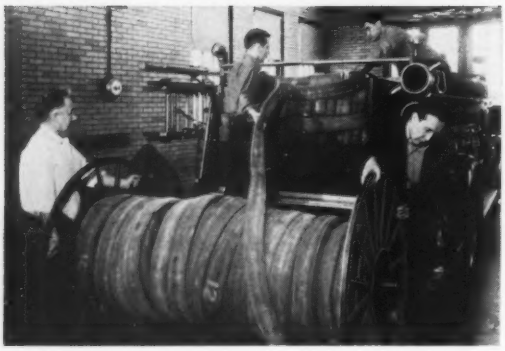
J-200—Proven dependability in field tests and under actual fire conditions—500 G.P.M. capacity —for use on hand lines—portable deluge sets—ladder pipes.

JN-200—Completes the full line of Mystery Nozzles —Delivers 1500 G.P.M.— at 30° setting 100 lb. nozzle pressure, widely used as a Master Stream Nozzle.

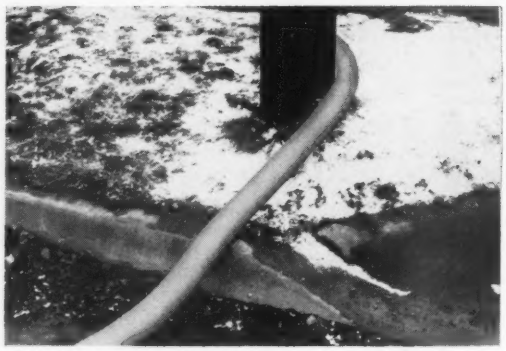
ELKHART gives you the complete Mystery Nozzle line

There is no substitute for quality and dependability

ELKHART BRASS MFG. CO., INC.
ELKHART, INDIANA
Fire Fighting Progress . Since 1902



FLEXIBLE– Sure, Republic Fire Hose is flexible or no self-respecting fire department would use it . . . and lots of them use Republic Fire Hose exclusively.



DURABLE– High burst and resistance to pressure shock or water hammer. Strength of filler yarns gives this quality . . . no hose on the market has any better yarn in the jacket than Republic Fire Hose.

GOOD GRIP–You can grip and hold onto a rough surface much better than a smooth one. The rough texture of Republic Fire Hose inspires many firemen to identify Republic's as the "good gripping hose."

STORAGE SPACE–Curing shapes the hose. Republic's Flat-Cure permits easy handling, storing and coiling of more footage than any other shape.

GOOD FIRE HOSE!

Republic Rubber makes *good fire hose*...cotton or cotton and dacron jackets, rubber lined.

Everything about Republic's Fire Hose is special . . . the rubber (specially compounded); the yarn (specially selected); the weave (special design), to give the qualities of flexibility, water-tightness and durability. Below are the four grades of Municipal Fire Hose made by Republic Rubber. Order from Youngstown, Ohio, or any Republic District Office.

MILDEW-PROOFED

Provar treatment of cotton jackets is an exclusive process developed by Republic Rubber for the prevention of mildew and rot. The treatment is durable, will not wash out or lose its effectiveness. All four grades of Municipal Fire Hose made by Republic are supplied with Provar protection.

CHAMPION—Dacron filler, test pressure of 600 lbs. Best grade Fire Hose made.

TOWER — Dacron filler, test pressure of 400 lbs.

CHARIOT — Cotton yarn, test pressure of 400 lbs.

TARGET—Cotton yarn, made to meet demand for heavy-duty hose at moderate cost.

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS

Ready to write a proud record of

FIRE-FIGHTING SUCCESS

. . . another triple combination pumper and aerial

American FIRE TRUCK

In four ways, this combination truck is ready to help write a proud record of fire-fighting efficiency . . . of better-than-ever community protection.

As a pumper, it has a 750 gpm Class A duplex multistage pump . . . with instant three-way selection for pressure, volume or series operation. As an aerial ladder truck, it features a Memco 65 foot electrically operated aluminum ladder.

For ever-ready water, it carries a 400 gallon booster tank. Ground ladders (not visible), generous hose bed and booster hose reels with Barton Super-Fog Guns are other major advantages.

To get exactly the truck *you* want — standard or custom built — talk it over with your American representative. He'll be glad to give you full details.

ONLY at American can you select so many of the features you want: Choice of chassis, of midship or front-mounted pumps, of body styles and dozens of other important details.

Contact your American Representative soon! *Write for this new apparatus bulletin.*

American

AMERICAN FIRE APPARATUS CO.

FIRE APPARATUS CO. "Always Pioneering with Better Engineering"

Main Office: Main Street Road, Battle Creek, Mich. • Plants at: BATTLE CREEK, MICH. • MARSHALLTOWN, IA.

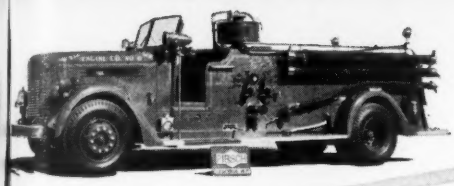
"NEXT TIME, TRY HEWITT-ROBINS 'DACRON†' FILLER, THE LIGHTWEIGHT, EASY HANDLING HOSE!"

Hewitt-Robins manufactures all types of Municipal and Industrial Fire Hose.

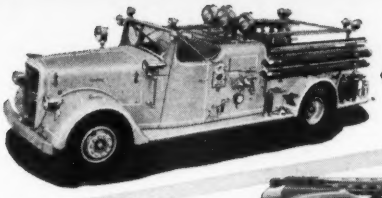
†Du Pont T. M.

HR **HEWITT-ROBINS** • STAMFORD, CONNECTICUT

Hewitt Rubber Division, 240 Kensington Avenue, Buffalo 5, New York

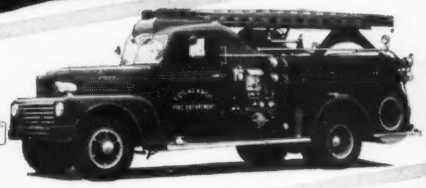


PIRSCH
EST. 1857

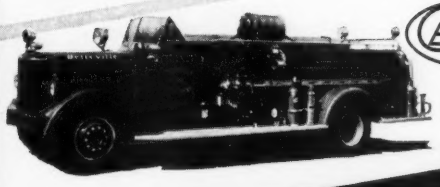


WARD LA FRANCE

EWD

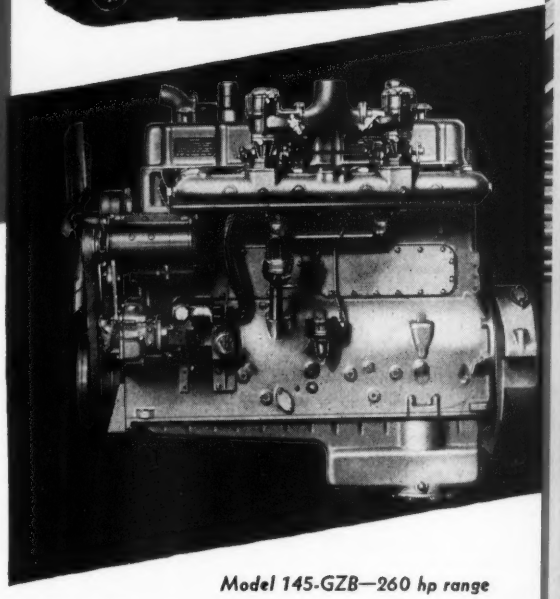


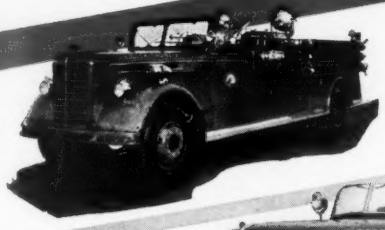
HOWE



CENTRAL

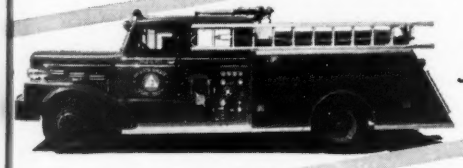
with ALL these Fire Fighters WAUKESHA the preferred POWER



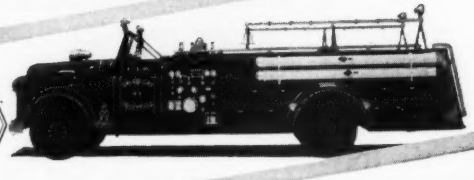


OREN

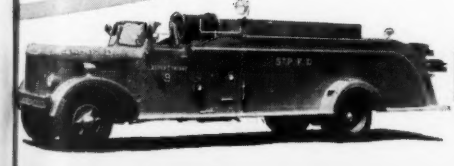
AHRENS-FOX
C. D. BECK & CO.
Sidney, Ohio



Fire Master Corp.



Thibault



THE GENERAL FIRE TRUCK CORP.

Model 145-GZB—260 hp range

WAUKESHA FIRE FIGHTER engines . . . rugged, powerful, fast-starting . . . range from 125 to 260 hp . . . 320 to 817 cu. in. displacement. They are designed and built for fire engine service, with precision-type extra high capacity bearings, single or dual carburetion and ignition, counterbalanced or non-counterbalanced crankshafts, and arranged for full electrical equipment and all modern accessories—the world's finest fire fighter power. Send for bulletins.

WAUKESHA MOTOR COMPANY, Waukesha, Wis.
New York • Tulsa • Los Angeles

289

WAUKESHA FIRE FIGHTER ENGINES

With this light, flat-folding fire hose you're ready for fast, protective action

Simplify your buying! Save multiple requisitioning. Make your Quaker-Quaker Pioneer distributor your single service for all rubber products including conveyor belting. Write for free brochure and name of your nearest distributor.

Lightweight, space-saving and easy to handle, this hose belongs in *your* safety program. It folds flat for neat storing on racks—even ones made for unlined linen hose. Saves precious minutes in emergencies, too. When pulled from rack it unfolds quickly without kinking. Also dries rapidly, enabling you to test it frequently in fire-drills. Tube is slow-ageing synthetic rubber compound, crack-proof, leak-proof, non-acid forming and always resilient. Cotton yarn jacket and tube securely bonded together. Available in I. D. sizes 1½″, 2″ and 2½″ all guaranteed to take test pressure of 300 p.s.i. In 25, 50, 75 and 100 ft. lengths. Complete line also includes belting, packing and moulded rubber for every use.

HKP
H. K. PORTER COMPANY, INC.

H. K. PORTER COMPANY, INC.
QUAKER RUBBER DIVISION
Philadelphia 24, Pa.

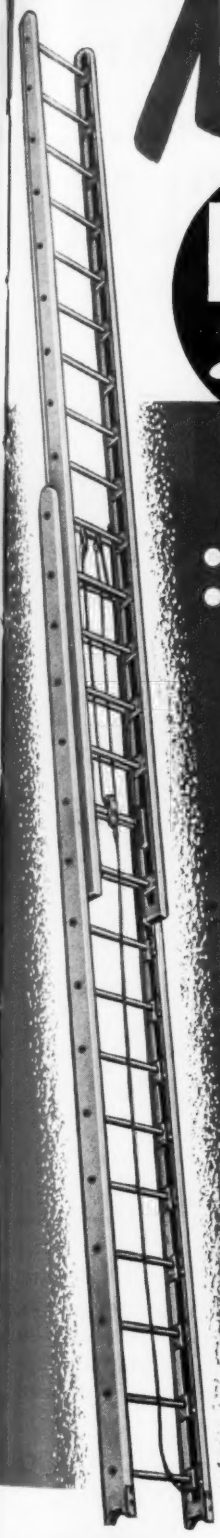
QUAKER PIONEER RUBBER DIVISION
San Francisco 7, California

See us at New England Fire Chiefs' Convention June 25 to 28th

New 1000-A SERIES

DUO Safety

ALUMINUM FIRE LADDER



***with Exclusive* DUO-SAFETY TONGUE and GROOVE CONSTRUCTION**

- **NO HOOKS or GUIDES to injure hands!**
- **NO JACK-KNIFING!**

Now, Duo-Safety's exclusive tongue and groove arrangement is extended to a great new ladder line... the new 1000-A Series. This outstanding construction design holds the sections together absolutely firmly and rigidly, with no obstructions of any kind!... requires a minimum of banking height ...is more compact with minimum weight. It's the greatest development in fire ladder construction in years and years!

Other Features:

(A) EXTRA STRONG Light Weight Channel Construction

(B) RUNGS ELECTRICALLY WELDED to Outside Channel

(C) RUNGS INTERNALLY EXPANDED on Both Sides of Rung Plate

(D) NON-SHEARING RIVET

... and, of course, all non-aluminum metal parts are plated for longer, non-rusting service.

DUO Safety

The 1000-A SERIES Offers Another Choice of an ALUMINUM LADDER for PUMPER USE

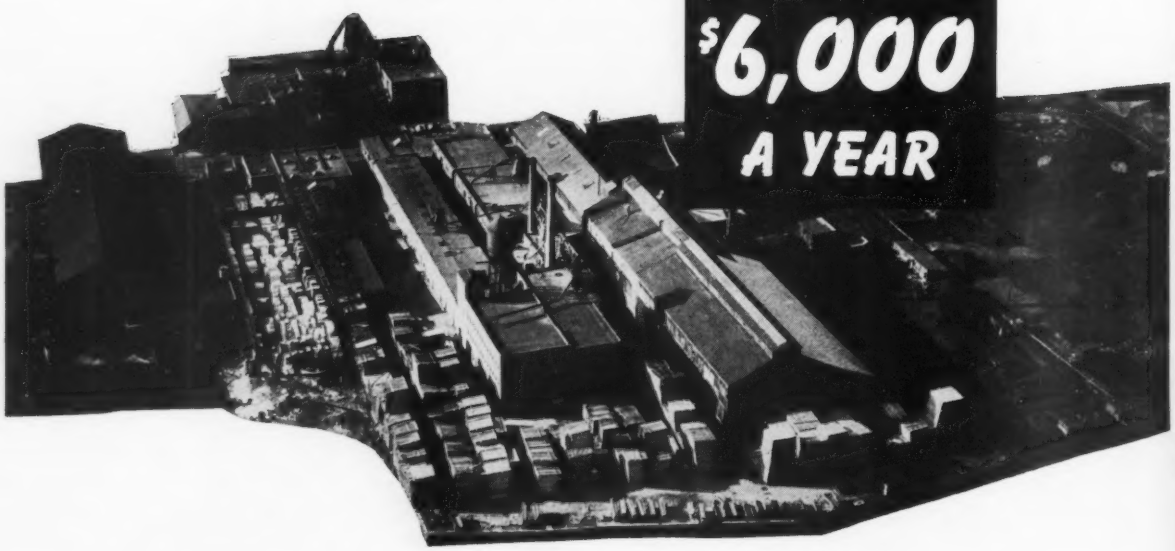
Series 1000-A has the identical construction, in lighter weight, as the Duo-Safety 900-A Series, and is a substitute for the famous 700-A Series. This sensational new ladder is available in 2 (Series 1000-A) and 3 (Series 1025-A) section ladders, in lengths up to 30 feet, and expands the Duo-Safety line of aluminum ladders for pumper use to offer a ladder for every requirement.

DUO-SAFETY LADDER CORP. OSHKOSH, WIS., U.S.A.

In Canada: La France Fire Engine and Foamite, Ltd., Toronto

THE WEISBERG-BAER COMPANY

protects its property *Automatically*.... gets better FIRE and BURGLARY PROTECTION and SAVES $6,000 A YEAR



Your organization performed in a most efficient manner at the time of our recent fire. Prompt detection, and dispatch of the fire department prevented any serious loss. We consider your automatic protection superior to other more costly methods. Our savings amount to $6,000 a year.

Charles J. Sweet
Vice President

ADT

Controlled Companies of
AMERICAN DISTRICT TELEGRAPH COMPANY
Executive Offices
155 Sixth Avenue, New York 13, N. Y.
A NATIONWIDE ORGANIZATION

One of the largest manufacturers and wholesalers of lumber, mouldings, doors and millwork in the New York metropolitan area, The Weisberg-Baer Company demands the best possible protection against fire, burglary and other hazards.

Upon the recommendation of insurance and other fire prevention experts, officials of the firm decided upon complete ADT Automatic Protection, consisting of Sprinkler Supervisory and Waterflow Alarm Service for mill and storage buildings and Burglar Alarm Service (including photoelectric devices) to guard buildings and yard against trespassers.

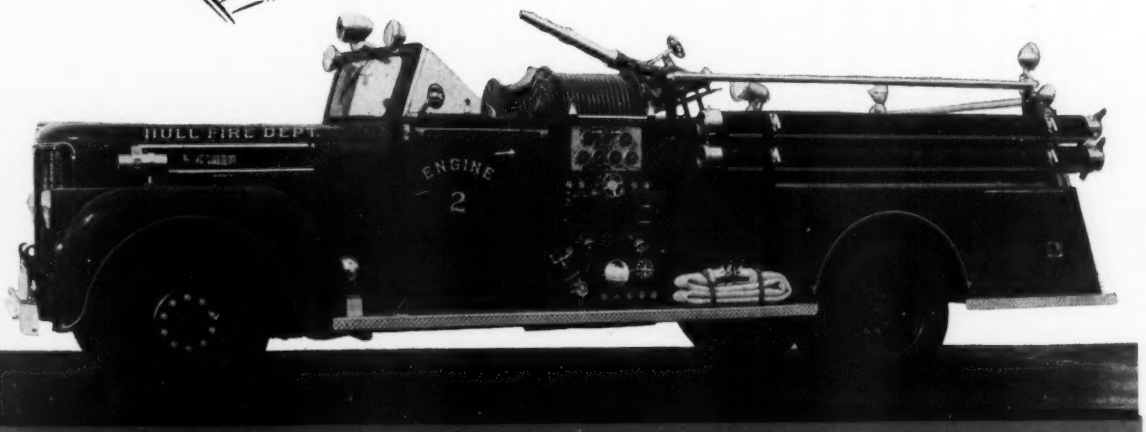
Why not find out what ADT can do for you?

Whether your premises are old or new, *sprinklered or unsprinklered*, there is an ADT Automatic Protection Service to give you better protection for property, profits, and employees' jobs than can otherwise be obtained, *and at less expense.*

An ADT specialist will be glad to show you how combinations of automatic services can protect *your* property. Call our local sales office if we are listed in your phone book; or write to our Executive Offices.

HULL, MASSACHUSETTS:

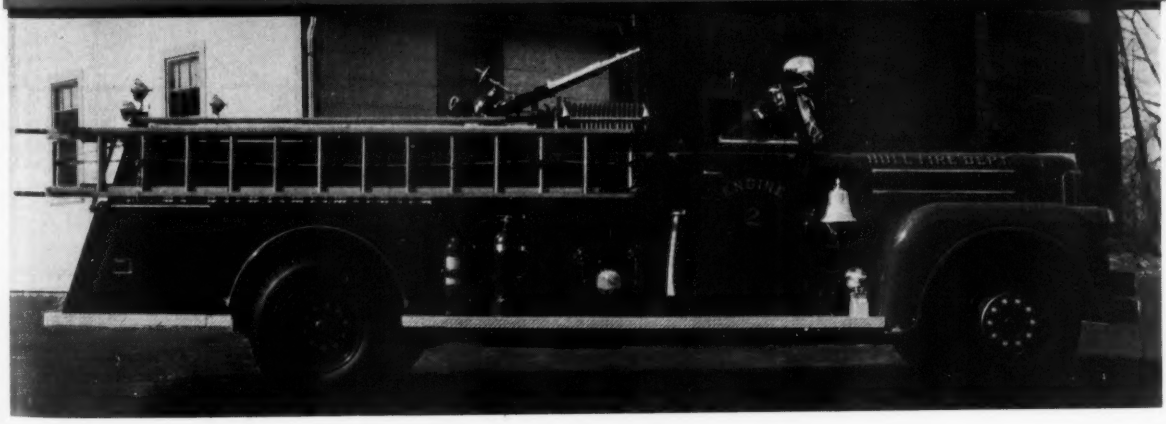
SELECTS APPARATUS BIG ENOUGH FOR THE JOB . . .



HULL, MASS. is another town whose fire officials wisely insist on apparatus BIG enough to cover any fire in their unusual town. Here is the home of world famous NANTASKET BEACH—with its well protected pleasure park.

Be certain—when you select apparatus for your town—that it is BIG ENOUGH TO DO THE BIG JOBS. We at MAXIM will be glad to assist you, anytime.

MAXIM
MOTOR COMPANY
MIDDLEBORO, MASSACHUSETTS



THIS MAGAZINE + ABP =

GREATER SERVICE TO YOU, THE READER

Few fields of American business and industry are without trade or professional organizations. In the field of publishing, ours is "ABP" —the Associated Business Publications.

ABP is a group of over 160 top business magazines, each dedicated to increasingly greater service to subscribers and, as a result, to advertisers.

In fact, in the field it serves, this magazine is *the only highly specialized, national, paid-circulation magazine in the ABP group*—the only one of its kind that can claim the extra quality which stems from ABP-membership.

Because 1956 marks ABP's Golden Anniversary, we list just six of the many fine ABP principles we live by in producing an ethical magazine that serves you to the maximum:

1. YOUR INTERESTS COME FIRST

Meeting and continuing to meet your business needs and interests is the objective we place before all others.

2. TRUTH AND HONESTY ARE ESSENTIAL

Every decision, step and statement we make is based on fact without distortion—the soundest means we have of earning and holding the faith of readers and advertisers.

3. EDITORIALLY, WE MUST LEAD . . .

Our editors must not only present material that has genuine and professional significance, they must interpret that significance in the light of today's facts and tomorrow's trends and developments.

4. . . . AND ENCOURAGE ADVERTISING QUALITY

Because informative, factual, businesslike advertising helps you most, we constantly recommend it to manufacturers—in your business interests and theirs.

5. COMPETITION MUST BE FAIR

Under all circumstances, we must present facts without bias or distortion—maintain one set of space rates for all advertisers—keep our editorial columns free from publicity donated to manufacturers as a consideration for paid advertising—protect the integrity of every page in the magazine for our readers who have bought and paid for it.

6. OUR PURPOSE MUST BE DIRECT

Each issue of this magazine must reflect a true understanding of your field and, using every constructive way possible, further its interests and the business welfare of every individual who has a part in it.

As one of its proud members, we salute ABP on its Golden Anniversary, and rededicate ourselves to the professional publishing principles it stands for—now and in the many years ahead.

FIRE ENGINEERING

305 East 45th Street, New York 17, N. Y. OREGON 9-4000

ABC / ABP

Published by the Case-Shepperd-Mann Dept., Business Papers Division of The Reuben H. Donnelley Corporation

SQUEEZES PAST OBSTRUCTIONS

E & J RESUSCITATOR - INHALATOR - ASPIRATOR

ACCEPTED COUNCIL ON PHYSICAL MEDICINE and REHABILITATION AMERICAN MEDICAL ASSOCIATION

When partial obstructions will not yield to aspiration, or when the air passages are swollen almost shut, the exclusive E & J feature "Precision Flow Control" assumes life-saving importance in emergency rescue treatment.
With it the operator can quickly find just the exact flow of oxygen that will squeeze past obstructions short of complete blockage to provide full inhalation and exhalation at a *slow but life-saving rate!*

FIND OUT MORE ABOUT THIS VITAL E & J FEATURE . . .
Data and demonstration without obligation.
Write to Dept. 544-7 at address below.

E & J RESUSCITATOR • ASPIRATOR • INHALATOR
. . . first name in Resuscitators

E&J

E & J MANUFACTURING COMPANY

100 E. Graham Place, Burbank, California

Don't Overlook the Connecting Link

The connecting link between the private fire alarm system or sprinkler system and City Fire Department is the Master Box.

Your fire losses are beyond the curb line. And you aren't getting 100% value from your alarm system unless your city circuits are interconnected through the Master Box to industrial plants, schools and public buildings.

Protect yourself and your citizens *all the way*. Close up the gap. Remember, you depend on industry — it's up to you to protect it.

GAMEWELL

THE GAMEWELL COMPANY, Chestnut St., Newton Upper Falls 64, Mass.

In Canada: Northern Electric Co., Ltd., Belleville, Ontario

FIRE ENGINEERING

VOL. 109, NO. 6 JUNE, 1956

CONTINUE MATCHING FUNDS

In April 1956, the matching funds program of the Federal Civil Defense Administration was terminated —at least insofar as it bore upon certain facilities for the fire service.

There is talk about the program being renewed, and possibly expanded to cover additional needed fire control equipment. We devoutly hope so.

That hope is inspired by several developments, the most important being that of all the millions spent in the name of Civil Defense in the past year, those dollars invested in fire apparatus and equipment, and communications produced, we believe, the most substantial return on investment. Furthermore, the investment is returning immeasurable dividends in safety and efficiency day after day to both the public, and to the fire service itself.

This praise, coming from a Journal which has in the past taken editorial pot shots at Civil Defense as directed "on the Hill," may seem a bit irregular. But just as we criticized the old CD "give-away" plans of World War II because they were predicated on the use of makeshift, sub-standard fire fighting facilities, so we now hasten to acclaim the Federal Civil Defense Administration for adhering to the recommendations of the nation's fire fighters in providing matching funds for facilities to measure up to the standards recommended by the fire service.

Our only plaint at present is that the F.C.D.A. matching funds were so limited that even many of the target areas were unable to avail themselves of them. Of course, on this point it must be admitted that in many cases the failure to secure them was not so much a question of lack of funds, as of procrastination on the part of those who should have made application for those funds.

But wherever government, state and local forces combined to present their requests, supported by the necessary substantiating data, they got action.

In the field of better emergency fire communications alone—with heavy emphasis on mobile radio, and warning and alerting systems, we see daily ample evidence of the value of matching fund cooperative effort. No one can question what radio so purchased, has done for knitting together the fire forces of the areas which are properly listed as "targets", for speedier, more efficient mutual aid, in time of disaster—whether it be fire, flood, hurricane, train wreck or what have you. Nor can one seriously question the usefulness of the matching fund program for fire apparatus and equipment itself in helping fire forces deal with the challenges imposed by these "peacetime" disasters.

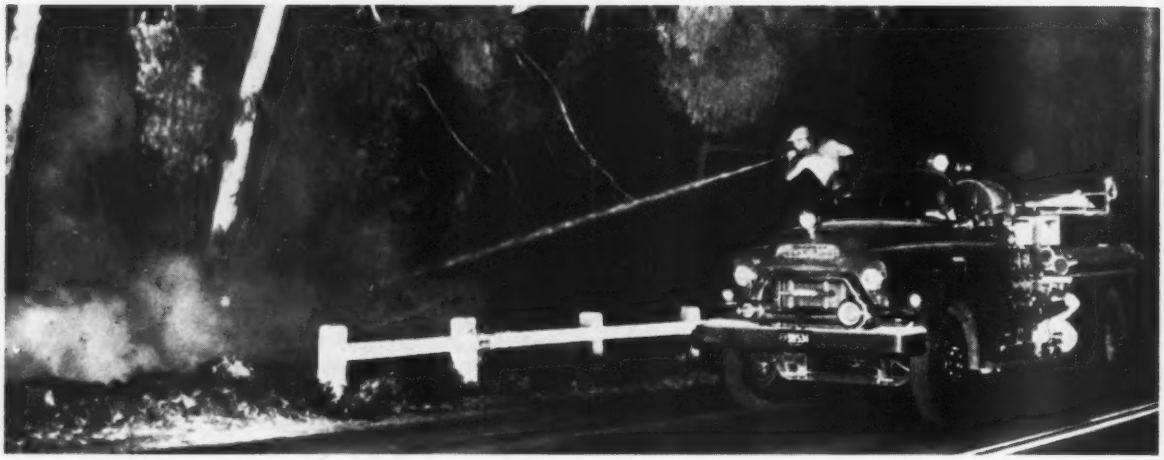
As FIRE ENGINEERING has pointed out, the fire service is the first to be called, the first to respond with the trained personnel and the necessary mechanical and other facilities, when a catastrophe of any kind strikes. That it has been able to justify the faith of those who have called upon it in time of crisis, is in no small measure due to the material assistance provided by F.C.D.A.

We cannot vouch for the amount or condition of the Civil Defense stock-piles of other things, either given outright or on some matching basis, to other Civil Defense services. By their very nature, most such stocks have only "standby" value. They must await the suitable emergency before they can be of any good. But it is different with the communications and other F.C.D.A. facilities procured on matching funds for the fire service. Such assets are "operating assets." They may wear out, but they won't rust or rot out! In short, they are for the most part in day-by-day use against deadly, destructive fire, and whatever other emergencies they may be required to meet. Thus the nation's stockholders, including the fire forces, are getting some tangible and profitable return for their money.

In the light of this evidence, as well as their value as essential fire defense reserves which they provide against the ever prevailing threat of enemy attack, FIRE ENGINEERING urges for the future an even more comprehensive and energetic program of F.C.D.A. matching funds for the fire service.

Roi B. Woolley

Editor



The value of effective water carriers in setting up defense as well as pushing attack is illustrated by this crew fighting to prevent furious 1955 Santa Barbara forest fire from jumping Highway 101, 20 miles north of that city

Task Forces Of Today's Fire Attack — Tankers, Tanker-Pumpers and Boosters

A SPECIAL FIRE ENGINEERING REPORT

Based on information supplied by over 1000 representative fire departments that carry the water —and the attack to the fire.

ONE OF THE ENCOURAGING, if imperceptible transitions occurring in the nation's fire service is the shifting of its philosophies, and its strategies and techniques from *fire defense* to *attack*.

The emphasis heretofore generally placed upon defense against fire may have been excusable in bygone days, but that thinking cannot hold in this chemical and atomic era of explosively fast-starting, fast-spreading fires.

The fire service may be, as so often said, "the nation's first line of defense against fire," but it must be remembered also, that battles—whether against a wartime enemy or against destructive fire, are won by attack, not defensive measures.

A partial story of this new conception of fire suppression has been told in a series of articles previously published in FIRE ENGINEERING.*

In simplest terms, this theory of attack means getting to the fire quickly with the facilities of men, equipment and extinguishing agents to hit the fire hard immediately on arrival. It means getting into action within those first few precious minutes during which fire breeds and spreads on the assumption that any undue delay in attacking the blaze may spell all the difference between offensive or attack, and defensive or retreat, between a "trifling" fire and a "conflagration."

Granted that discovery and reporting of the fire are within reason, water or other extinguishing agents carried by the attacking force should, if properly applied, suffice to extinguish the fire. Even if not, it may be able to hold and confine it until additional attack forces are available.

Obviously, therefore, a prime requisite of attack is to get the water to and onto the fire immediately upon arrival; next, to have sufficient supplies to prevent further extension and involvement if the fire is a "fast burner."

Boosters have outgrown their britches

Years ago, the chemical wagon and the chemical booster setup were the main reliance of fast initial attack. If a fire couldn't be licked with the 45-gallon soda and acid booster (some rigs carried twice that capacity) it was time for the "big line."

With the conversion of the chemical booster to straight water types, the next step was the switch from the cylindrical to rectangular booster. Then came the 1½-inch line, operated off the booster. And as its possibilities developed, so did the booster tank in size and scope.

Present and future requirements of attack are leading to more extensive use of booster and 1½-inch hose. The addition of proportioners to enhance water supplies with wetting agents and to provide fog-foam are, under certain conditions, tantamount to increasing booster tank size.

* "Coordinated Attack Urged to Improve Fire Control Strategy," April, 1949; "Adequate Lighting Speeds Up and Safeguards Fire Attack," July, 1949; "Carrying the Attack—and the Water to the Fire," September, 1949; "Modern Respiratory Equipment Essential in Fire Attack," February, 1950 and "What Can Be Done to Improve Rural Fire Attack and Control?" August, 1951.

In short, the booster has grown up. With the advent of better pumping and hose hookups, improved fog nozzles and applicators, larger water supplies, plus additives, the booster has become a most effective attack task force.

A further newcomer in the "attack arsenal" (measured in years of use) which is complimenting the value of booster tanks by making their contents go farther, is the high pressure unit. Introduced successfully by the armed forces in World War II and since widely adopted in airport protection and for effective suburban and rural coverage, this development was formerly practically a stranger to the big city fire departments. But it too has now found acceptance in certain metropolitan areas. The advent also of the multi-stage pump with both high and conventional pressures has hastened the acceptance of high pressure into the metropolitan fire battle lines to lead initial attack.

The strategy in the use of all these attack units takes different form, but the principle of application is the same: To provide fast, effective small stream application either while engine companies are laying in from the nearest water supplies, generally hydrants, or to provide the sole means of attack (and defense where necessary) where no water may be immediately available.

Cities Developing special attack units

One of the earliest cities to make extensive use of special booster tank trucks was San Francisco. Developments of the old chemical wagons, these booster companies as they were termed, operate special apparatus, for the most part housed in stations with engine and ladder companies. At last accounts the rigs were manned by a minimum of two men. One unit responds to all first alarms and to still alarms as needed.

The general specifications for these units are: 500-gallon water tank and 600 gpm pump; 500 feet of 1-inch hard rubber booster hose on twin reels, with combination fog nozzles. Most of the later trucks have pre-connected 1½-inch hose lines (150 feet) with similar nozzles.

Use of these 15 vehicles, it is said, frees the engine companies for work with larger streams. The late Fire Chief Edward P. Walsh reported these units "control most of the small fires and are very valuable for chasing sparks at the big fires."

Miami, Fla., is another city that has found what the fire department calls "wet water wagons" highly effective. Beginning with a single experimental unit about 1948, former Fire Chief Henry Chase ordered three more in 1949 and additional units have since been commissioned.

These treated water units are essentially striking forces. The wetting agent solution is premixed in the 500-gallon tanks and discharged through four 1½-inch hose lines. In addition a booster line is available. All hose lines are fitted with adjustable fog nozzles. The four lines will empty the water tank in about six minutes of average fire fighting. However, operations can be continued with water furnished by supply lines connected to the tank.

These trucks are manned by an officer and five men all equipped with respiratory protective equipment which is kept ready.

The Philadelphia Fire Department has developed attack striking power by the addition of its Special Service Company which includes a variety of special apparatus such as its "S-100" wet water and foam truck; the "SS-99" giant deluge unit and others previously described in FIRE ENGINEERING.

Philadelphia is one of the first large municipalities to install high pressure fog trucks which it is reported, are setting up new attack records in their districts.

Tankers and tanker pumpers coming into their own?

A close relation to the combination and special apparatus described in the foregoing are the tanker pumpers and the "mother," or support supply tankers and other auxiliaries. They are the backbone of the striking forces in areas lacking public water supplies or wherever fire attack is predicated upon transporting water to the fire.

As originally employed by the fire service, the auxiliary water carrier was very similar to the tank truck used by commercial bulk liquid handlers. In fact, some of the earliest tankers adopted by the fire service were drawn from the commercial field.

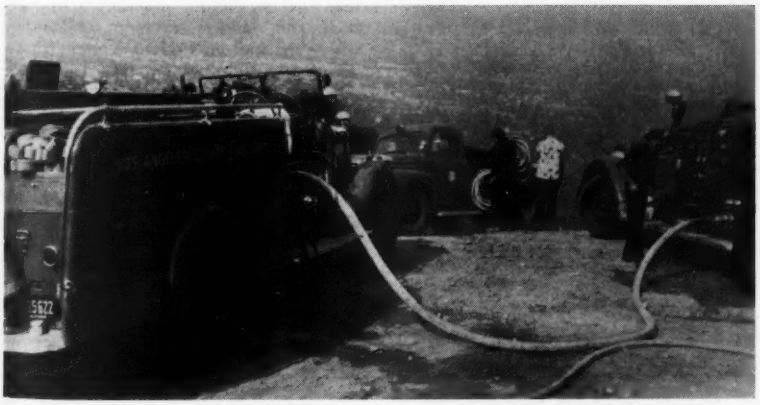
Initially, the sole purpose of these auxiliary carriers was to get water—then as now, the universal extinguishing agent—to the fire. But experience soon indicated that for most effective use a pump of some sort was essential to speed in refilling the container. This was particularly true where fire fighters were solely dependent upon their own water supplies and these were limited.

An excellent answer to the problem of replenishment was found in the small, light but competent portable pump. Today, the majority of fire departments, particularly those in the rural and outlying areas, carry one or more portables either on the carrier itself, or on a companion unit.

It soon followed that there were many occasions when the tanker would be called upon to operate independently of separate pumping apparatus, in brief, where it must serve as pumper-tanker.

To meet this need the fire service began mounting standard fire pumps on these auxiliaries, thus materially strengthening attack strategy. This greatly simplified operations where water carriers had to shuttle between the fire ground and

Auxiliary water carriers provide attack punch for Kent County, Delaware, fire fighters. When summoned, the H. H. Senger & Sons Co. of Smyrna, Delaware, quickly convert their 3500-gallon milk tankers to "mother" water carriers. These units are invaluable in rural mutual aid operations



The Los Angeles County Fire Department was one of the first to employ jumbo tankers and tanker pumpers. Today, it probably uses more water carriers than any other single department

Quick attack methods influenced the addition of a 35-foot, spring loaded, extension ladder on this 4 x 4. Built by H & H Fire Apparatus, Inc., the unit is equipped with a 250-gallon tank and a 500 gpm front mount pump

Tandem rear axle style by Howe Fire Apparatus Co. The tank capacity is 1200 gallons and the pump is a 500 gpm front mount. A feature is the water level gauge on the tank

Conventional fire apparatus appearance is retained in this 1200-gallon tanker by Sharpsville Steel Fabricators, Inc. Pump is a 500 gpm front mount

Compartments are featured on this 1200-gallon tanker by Young Fire Equipment Corp. A 35-foot ladder, portable pump, booster reels, 1½-inch and 2½-inch hose are completely enclosed. Power-take-off pump is of 200 gpm capacity

the water supply source. The ubiquitous portable could be left at the water draft point while the tanker discharged to the pumpers operating at the fire, or in a pinch, conducted direct attack on the fire.

From this point it was but a short step to add a hose load and related equipment to create of the carrier a complete fire striking force, giving it greater flexibility of operations, enhancing the efficiency of the fire department, and benefitting many communities by reduction in their insurance ratings.

Construction characteristics of fire service tankers

The original fire department tankers maintained the physical characteristics of the commercial designs from which they were patterned. Most striking detail of the vehicle was the oval tank construction which is still typical of the average common liquid transport encountered on the highways today. This type tanker is still produced by many fire apparatus manufacturers and apparently is preferred by departments that desire the large semi-trailer design tanker.

Very few cylindrical-type tankers are encountered and these are chiefly of small size, and in remote areas were water carriers are for the most part improvised out of almost any kind of liquid container.

The rectangular, or flat type construction, is rapidly gaining in popularity. It is common to the majority of tanker-pumpers built today and is, of course, the basis of most large booster tanks. By this style, the traditional appearance of fire apparatus it retained. It has the further virtue of complimenting compartmentization, storage and handling of various fire appliances and equipment. An attribute of this type is the fact that it may have a removable top or trap which facilitates cleaning, following the use of foul water.

Some carriers are being constructed which are a combination of both the foregoing. Several popular models have the oval tank enclosed in rectangular bodies to provide compartments and stowage space for hose and other facilities. Considerable ingenuity is shown by many volunteer units in integrating tanks and bodies and fittings. Under certain such conditions, mounting of suction hose and ladders presents difficulties, where the unit, of course, is intended for actual fire fighting. Nevertheless many departments have developed effective arrangements to enable them to carry a surprisingly large amount of equipment.

Various methods are employed for mounting both fixed and removable portable pumps used for filling and fire fighting. Some examples are shown in the accompanying illustrations. The use of small reversible pumps is noted.

The subject of water tanks and capacities is partially covered in the *Suggested Specifications for Motor Fire Apparatus* (NBFU Pamphlet 19) and the NFPA SPECIFICATIONS FOR MOTOR FIRE APPARATUS. These should be studied by all fire departments using, or contemplating use of tankers and tanker-pumpers.

Under the subject "Water Tanks," the NFPA Specifications (1952) states:

Where larger water tanks are required it is essential to provide an adequate chassis and motor. It is seldom practical to use tanks of more than 1,000-gallon capacity on fire fighting apparatus although larger water tank units are sometimes used as supplementary or auxiliary equipment.

The fact should be emphasized that where attack strategy calls for use of leader lines, or even more important, for 1½-inch hose lines, the supply tanks should be as large as is consistent with safety and the needs of the operational technique employed. In the practice of charging these initial attack lines as soon as stretched and without waiting for a supply line to be connected to the apparatus, it should be obvious that to maintain any adequate flow for the attack the larger tank is a necessity.

No attempt is made in this study to discuss improvised emergency water carriers such as street sprinklers, tree sprayers, refuse and waste transports, mounted barrels and other containers, although many of these have a part in emergency fire fighting.

Tanker vital in rural operations

It is in rural operations that the auxiliary tanker and tanker-pumper have gained their reputation. Many times in a team combined with the pumper, the tanker has meant the difference between a good stop or a total loss.

In a typical operation the fire department pumper responds quickly to the scene. Using its booster tank, lines are stretched and the attack begun. In the meantime, the tanker has followed to the location and proceeds to refill the pumper booster tank. When this has been accomplished the water remaining in the tanker is used to supply the lines in operation.

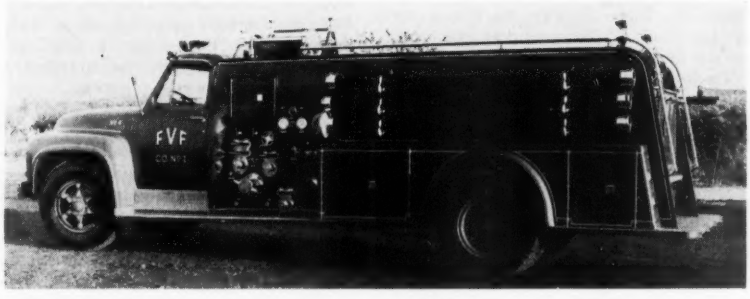
When empty, the tanker proceeds to the nearest water supply point for refilling while the pumper continues to attack. In large fires requiring more water than a single tanker can provide, use is made of mutual aid. In this, a number of tankers are assembled and used in a shuttle system between the units operating directly on the fire and the water source. This system of shuttle operation is of particular value where pumper relay combinations are impossible.

During periods of the year when poor roads and soft ground threaten tanker operations it may be advisable to restrict the heavy trucks to hard pavements. Some departments make this a standard procedure rather than risk bogging down. A type of relay is used in which the pumper drops a supply line connection at the driveway or lane leading to the fire scene. It then proceeds to the fire, paying out a 2½-inch line. When the tanker arrives it hooks to this line and supplies the pumper. Thus it runs no risk of immobilization.

Some apparatus manufacturers have designed equipment to overcome this problem of soft footing. Many of the larger tanker-pumpers now have tandem axles in the rear, the intent being to give

Designed for off-the-road operation, this 1500-gallon pumper tanker is equipped with a Mack four-wheel driven, balanced bogie for positive traction in soft ground

A stainless steel 700-gallon tank was mounted by Ward LaFrance for Mantoloking, N. J., on this 750 gpm engine. Additional features include a 200 gpm booster pump, front suction intake and a proportioning system for foam and wet water



Hose body divided by a walk-way features this 1000-gallon tanker delivered by Approved Fire Equipment Co. to Franklinville, N. J. A 750 gpm pump is midship mounted

This conventional type pumper by American LaFrance with a 600-gallon water tank, has extra hard suction provided for off-the-road water sources. A 2½-inch rear suction connection allows a supply line to be connected quickly

greater floatation and at the same time, more driving power.

Any study of rural water carrier operations should include consideration of manufactured or improvised portable tanks, basins and dams. In areas where the number of tank trucks is limited, these devices permit more effective use of available fire fighting equipment.

Instead of pumping directly from the tanker, with the possibility of tying the latter up, the pump operator connects hard suction and drafts from the canvas or other type sump.

The tanker dumps its supply directly into the basin and then returns to the source for refill. Where improvised water carriers are used in an emergency, the use of basin or other catch-all helps to conserve the limited water supply. In transferring the water from cans, barrels, buckets or other containers, there will be a minimum lost by spillage.

Tankers in forest and brush fire fighting

Where woodland and brush hazards exist beyond the range of domestic or other water supplies, tankers are indispensable. The type employed, and the method, depends upon the terrain, approach roads and highways, extent and severity of hazards, manpower for fire fighting and other factors.

If access roads or lanes offer routes to the fire scene, the standard tank truck or large improvised tankers may approach closely and hose lines can be stretched to attack the blaze directly. Or, the water carriers may support pumpers operating on the fire.

Under certain operations the use of previously mentioned canvas tanks or other improvised basins is effective in augmenting water supplies, and for filling pump cans, or as draft location for portable pumps.

Several types of folding "bags" or flexible tanks are used with success in forestry and rural operations. These can be carried filled on platform or other commercial trucks and suction taken directly from them on the fire ground. Or they may be carried unopened to a water source where they may be filled and transported to the fire, or to serve as relay points between pumpers.

Bumper protection for front mount pumps is achieved by the Valley Fire Truck Co. By use of this design, more space is obtained for securing equipment holders and pump attachments. Using a 4 x 4 chassis and frost-proof pump, the unit is particularly adapted to rural and forest areas

Where thoroughfares do not exist, special apparatus has been designed for off-the-road operation. Using all-wheel drive and protected by guard rails, these tanker "brush-breakers" can crash through wooded areas which would be impassable for standard equipment. In addition, the apparatus mounts a winch which further makes it self-sufficient. If bogged down in soft ground, it can pull itself out.

The ever-present jeep finds a wide application in both forestry and rural fire fighting. Due to its small size and power this type of equipment can use paths and trails for access and, although its water cargo may be limited, it can haul a good supply by means of a trailer.

Nearly all substantial apparatus designed for forest and brush service have pumps which can be operated while the truck is in motion. Where conditions allow, water can then be played on the fire over a wide front as the apparatus moves along the line (see cover illustration).

Tanker essential in protecting highway transportation

Even where municipal or other water supplies are available to fire fighters for combating fires in pleasure cars and commercial vehicles on the highway, certain such operations can be difficult and the fires costly. Where water is not immediately available, however, the problem becomes acute, particularly if fire is incidental to a wreck.

Designed for the lofty reaches of Marin County, Calif., this rugged International Harvester 4 x 4 has power-operated winch-plus. The 450-gallon tank can be discharged by the midship pump or while in motion by the auxiliary pump which has its own engine

The front mount 500 gpm pump helps distribute the weight on this 1100-gallon tanker. The compact unit was built by American Fire Apparatus Co.

With the increase in modern, high speed limited access super-highways and thruways, new combinations of hazards face the fire fighter. Frequently the entrance points are separated by many miles and have been located for the convenience of the motorist and not the fireman. Just as frequently it is found that the access roads will be least desirable for efficient use in routing fire apparatus to the scene of an emergency. Water supply, under most conditions is either inaccessible or non-existent.

This situation usually necessitates the dispatch of tank trucks, or combinations of tanker-pumpers, to alarms received from or along the parkways. Where buildings such as service stations and/or restaurants or other properties on or adjacent to these thoroughfares are involved, the problem of water is even more acute; therefore the greater the need of tanks, both auxiliary carriers and tanker-pumpers.

Because of the distances that may be involved in coping with fires along the super-highways, and the need for speed in responding and because lives may be at stake, the use of light, fast trucks has been recommended by some authorities. The water-carrying capacity of the first arriving apparatus should, under normal conditions, be satisfactory for several minutes of effective fire fighting. During the initial period, the heavier and larger capacity carrier would be responding with the reserve supply, should it be needed. Where there is possibility of buildings being involved, or the incident involves large transports and cargoes, re-

Rub rails protect equipment of the Town of Tisbury, Martha's Vineyard, on the heavily shrubbed lanes and driveways in the district. Built by Maxim Motor Co., it carries 500 gallons of water

Booster reel enclosures give a trim appearance to this combined design by Universal Fire Apparatus Corp. A 500 gpm three-stage pump is mounted midships and the 1000-gallon tank has a manhole type filler

sponding fire forces may be called from two or more points, and from different directions, but in every case, water for prompt attack must be carried.

Because of the variety of hazardous materials being transported over the highways, it is necessary that apparatus be equipped with all types of extinguishing agents. This presents further complications for the use of the lightweight, fast, vehicles. However, by adding proportioners and wetting agents, along with water fog, and fog-foam, the limited water supplies carried on apparatus may be made to go farther in effectiveness.

These factors were all weighed by the New York State Thruway Authority in determining the best method of providing fire protection along the 400 and more miles of that highway, where municipal fire protection was not immediately available, and the Authority adopted a small, compact, lightweight unit, having the necessary facilities for at least temporarily meeting any fire emergencies that might arise along the route. On the Tappan Zee three-mile bridge over the Hudson River, the 18 light units have been augmented by a 1,000-gallon tanker and a regulation pumper.

Water carriers have been found essential for other bridge and tunnel protection. Specially designed apparatus incorporating water tanks are in wide use in urban, suburban and rural areas. Stationed at strategic entrances to tunnels and at bridge approaches and manned by trained personnel, the equipment may be promptly dispatched by radio as fire or other emergencies occur.

Throughout this study reference is made to utilization of various forms of commercial tankers, such as milk, gasoline and oil, either for fire fighting purposes or as auxiliaries to fire fighting units. In some areas these "conversion units" are giving excellent service, either as vehicles converted to permanent fire department use, or as "standbys" that can be converted when and if the emergency necessitates.

Perhaps the most unusual adaptation of the gasoline and oil tanker for fire fighting purposes took place in Dover New Hampshire in 1942, when 24 independently owned oil-tank trucks were made into improvised tanker-pumpers to serve in civilian defense measures.

Under direction of then Fire Chief George O'Neil, Auxiliary Chief of Dover, the city spent slightly under $250 to make the necessary adjustments to convert the carriers so that water might be pumped from the tanks, the capacities of which ranged from 600 to 1,200 gallons each.

To adapt the units it only required installation of a special valve on the fuel pump of each truck at a cost of slightly less than $10 each. The heavy duty rubber regulation fuel delivery hose was used with C. D. fire nozzles, although regulation fire hose (or then C. D. hose) was preferred.

At a mass demonstration staged in Dover, June 21, 1942, the 24 trucks rolled into action with regular fire apparatus. Houses along both sides of Washington Street were wet down with streams, showing how the improvised pumpers could reinforce regular forces following an air incendiary attack.

After the street demonstration, the 24 trucks reloaded with city water piped from the Pacific Mills and reassembled within an hour to erect a water screen at the City Playground. Later, additional supply sources were provided to reduce the reloading time.

Using a 1½-inch hose (100 ft.) and ⅝-inch tip, one of the larger tank pumpers was able to direct an effective stream over adjacent 3-story buildings.

Seventeen independent oil companies were represented in the truck fleet used in this civilian protection measure. The drivers were all trained to respond on call, and operate the units. In the emergency, the truck loads of gasoline or oil were to be dumped, the tanks filled with water and taken to the desired location. A slight mixing of gasoline or oil and water resulted when the water stream was first discharged, but this did not impair the fire extinguishment, and the fuel companies gladly absorbed the fuel loss, amounting to about 5 gallons each time the tanker was called upon to serve as a water pumper truck.

The trucks delivered 30 to 125 gpm at pressures of 60 to 80 psi depending upon the size of the vehicle. Utilizing 1½-inch hose with ½-inch nozzles, streams were reported effective on buildings 50 to 60 feet high. At this rate of delivery, each truck was able to pump for 15 minutes or more, from water carried in its own tank.

This World War II emergency procedure is still effective and is employed in a number of areas in controlling brush and forest fires.

"Fire Check" Inspections Reduce Philadelphia Fires

Philadelphia had almost 1,000 fewer fires last year than in 1954, according to Fire Commissioner Frank L. McNamee. The records show 13,495 reported fires in 1955 compared with 14,414 in 1954.

The biggest improvement was in the reduction of mercantile fires, which showed a drop of 133. Deaths from fire fell from 77 in 1954 to 50 last year and injuries from fire dropped from 348 to 232, the Commissioner reports.

Throughout the year, some 50,000 multiple-occupancy dwellings were "courtesy fire checked" by active fire fighting units and elimination of fire hazards was urged in 9,612 cases.

The Commissioner named "fire check" inspections as the foremost reason for the reduction. Other contributing causes included: the fire department's all-inclusive, year-'round fire prevention program and the public's awareness of the importance of fire prevention, stemming from the department's educational efforts.

"The fire checks and our fire prevention programs really are proving their worth," McNamee said. "We've pointed out hazards to tenants, owners, school children and office workers and they're complying with our recommendations. This is cutting down the chance of fire spreading with resultant loss of property —and possibly lives."

Fire situation at 6:00 p.m. the first afternoon. Heavy streams being used in efforts to save last wing of the plant. Heat and exploding magnesium forced firemen to exterior operations. Reading R. R. tracks in foreground

Costliest Fire Strikes Central Pennsylvania Town

Over 450 Firemen from Three Counties Battle Multi-Million Dollar Blaze Boosted by Magnesium. Radio Facilitates Mutual Aid

By CHIEF JOHN D. KLINEPETER

Secretary, Dauphin County Fire Chiefs Civil Defense Council

RAGING OUT OF CONTROL for nearly 30 hours, a $3 million blaze completely destroyed the Aircraft Engine and Parts Corp. factory at Grantham, near Harrisburg, Pa., April 28-29.

An estimated 450 volunteer firemen and fire police from Cumberland, York and Dauphin Counties, manned 25 pieces of fire apparatus from area companies during the battle.

More than a score of firemen were injured, fortunately none seriously. Two were hospitalized, one with a broken leg, a second with burns of both legs. Others were treated for burns, acid burns, smoke poisoning and cuts by ambulance men in a hastily erected first-aid station near the burning plant.

Grantham Fire Chief Daniel Keefer said he had no doubt the entire town of 490 population would have been destroyed except for the unlimited water supply and prompt response of other fire companies summoned by two-way radio.

The plant, a vast, rambling structure of brick, concrete and timber, was located on the eastern edge of the Cumberland County town. It employed 40 full-time workers, all but two of whom were on duty at the time of the fire.

The huge building was built in 1905 as a noodle manufacturing concern. It was abandoned in 1921 when the owner died and was vacant until the U. S. Navy took it over for storage during World War II.

Since 1946 when the aircraft parts concern moved in, the plant has been gradually expanded.

At 2:30 p.m. Saturday, April 28, employes were cleaning up, ready to shut down operations for the weekend. At 2:31, a tongue of fire, touched off in a yet undetermined manner, flashed from the northwest corner of the first floor, from the "degreaser" and preservative room, containing great amounts of flammable solvents, oils and greases.

A cry of fire brought 38 employes with various types of fire extinguishers, including carbon dioxide, foam and soda-acid. In the few seconds required to reach the room, the oil and grease-fed flames were beyond the capacity of the small extinguishers. No sprinkler system had ever been installed. To make matters worse, the fire door that possibly might have sealed the opening in the brick wall, could not be reached because of intense heat.

It was a hot, muggy day, with an outside temperature of 87 degrees; most of the plant's windows were open, through which came a gentle westerly breeze.

With heavy smoke rolling at their heels, some employes rushed to close the windows, and were able to shut all but two. Several other men drove two lift-forks from the building, which were all that was salvaged intact.

Aid called by radio

Fire Chief Keefer took the fire call at 2:33 p.m. at his grocery store three blocks from the firehouse, which is located a quarter of a mile from the factory.

Six minutes later, the Grantham volunteers had a 2½-inch line operating in a side door of the plant. Chief Keefer was confident the blaze could be confined to the solvent room. A 500 gpm pumper was located on the south side of the

building, drafting water from Trout Run, and the fire company's 1,200-gallon tank truck was close to the fire, adding its bit through a 250 gpm pump.

Keefer almost immediately radioed for two 500 gpm pumpers and a ladder truck from the Lower Allen Township company, eight miles eastward.

Within ten minutes, smoke had filled the interior of the plant and was rolling from every crack. Then fate took control of the fire from the smoke-eaters, as an explosion ripped upward from the solvent room, through the second story rear, and blew a flaming hole in the roof above.

Chief Keefer immediately radioed the Carlisle Civil Defense base station and requested six pumpers. Carlisle dispatched a 1,000 gpm pumper from its Cumberland Company, two 500 gpm pumpers from Washington Fire Company of Mechanicsburg, a 500 gpm pumper from Lisburn in York County and another 500 gpm unit from Silver Springs. A 750 gpm pumper was dispatched from Dillsburg. All these forces were within a six-mile radius, Lisburn and Dillsburg being the closest.

Lower Allen's equipment rolled in, located one pumper at Trout Run and a second in a mill race on the other side of the building, fed by Yellow Breeches Creek, a good size stream.

The ladder truck pulled up almost against the front wall of the burning plant and a ladder pipe was immediately put into service through one of the three end gable windows.

After ten minutes of fruitless attempt to halt flames sweeping along under the roof, with other sections of the roof involved by the growing updraft, and endangering men and apparatus, Lower Allen Fire Chief Glen Hawbecker pulled the ladder truck away.

By this time, the six companies called through the base station were in, the entire underside of the roof was ablaze and the whole second floor was involved, with flames shooting from at least 40 windows that had been blown out.

Chief Keefer then again radioed the Carlisle base station and asked for all the aid that could be spared.

Empire Hook and Ladder of Carlisle was dispatched, with other 500 gpm pumpers from the Mechanicsburg Naval Depot, Franklintown, Newberrytown, South Enola, Summerdale, York Springs, Dover, Williams Grove and New Cumberland.

The City of Harrisburg in Dauphin County sent the Allison Ladder Co. and a 750-gallon pumper of the Good Will Co. with Assistant City Chief R. M. Houseal, Sr., who is also Dauphin County Civil Defense Fire Chief.

The radius from which apparatus was drawn had now increased to a little more than 15 miles.

Entire community threatened

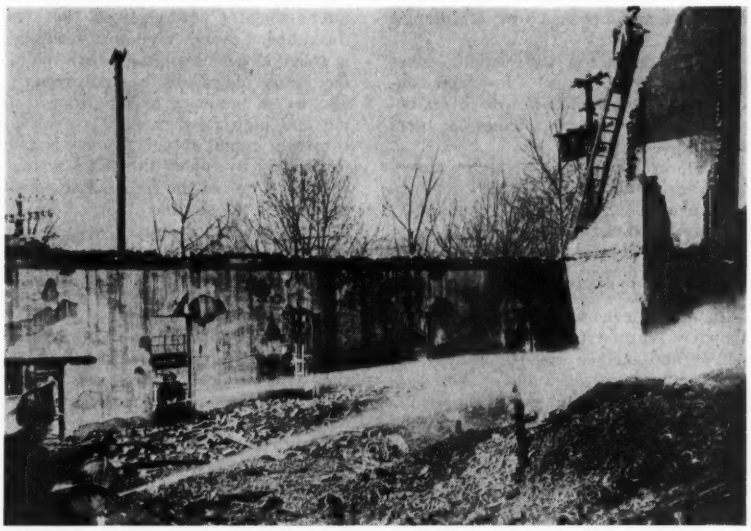
By 3:15 p.m. sparks and flaming debris had begun to fall on roofs all over the small community, and incoming firemen were hard-pressed for a time fighting these secondary fires. Booster lines were relied upon as the town has no hydrants.

Several grass fires were started more than half a mile away, drawing more sorely needed manpower from the main fire.

The town was virtually undergoing a fire bath, but fortunately no serious fires were started. By 3:45 p.m., the major portion of the factory roof fell, and after the last shower of sparks all over town was extinguished, firemen were able to turn to the major task at hand, the blazing factory.

In the confusion of the moment, the Reading Railroad Company, whose tracks are less than 50 feet from the east side of the building, was not notified of the fire. The first through train cut off Grantham's hose line where it was laid across the tracks. This was immediately replaced and dug under the rails.

The burning building was doomed by this time and firemen forced to back away from the intense heat. More than twenty-two 2½-inch lines were played on the inferno during the operation.



Firemen continue to cool ruins 26 hours after blaze started, between blasts of magnesium

Chief Keefer organized crews to man three deluge sets brought in by outside companies and strategically placed one of these master streams on each of three sides of the building.

Magnesium lets go

The second floor fell some time after 4 p.m., dumping scores of tons of airplane parts into the roaring blaze of the lower floor, and then is when the unexpected happened. A master stream boring into the blaze, struck a quantity of burning magnesium. The resulting terrific explosion sent streamers of the metal hundreds of feet skyward, mixing it with the swirling cyclone-shaped cone of yellow and black smoke that was visible for more than 20 miles.

Continued on page 530

The distaff side did its part. Ladies of Grantham, aided by members of ladies' auxiliaries of mutual aid companies served refreshments to the busy fire fighters

PART XV

Folding Salvage Covers— The "One Man Throw"

OVERHAUL AND SALVAGE . . . IN THEORY AND PRACTICE

By
ROI B. WOOLLEY

AS WAS POINTED out in a previous chapter of this series, there are several types of salvage covers in use and different departments use covers of different sizes.

Before describing the various cover folds, it is well to repeat a few facts concerning the kinds and sizes of covers because these details bear somewhat upon the kind of fold employed.

There are four types of salvage covers in general use today. These are (1) Rubber covered coated on both sides; (2) Rubber covered, coated one side only; (3) Duck or canvas (usually treated with linseed oil compound) and (4) Closely woven canvas (specially treated).

In addition, as has been pointed out, the new plastic-type covers, both transparent and opaque are being tried out in a number of salvage units.

Opinions differ somewhat concerning the kind and size of cover best suited for certain salvage operations. Selection may be influenced by custom, or by the nature of properties to be protected, by expediency, or personal preference. There is agreement, however, that fundamentally a salvage cover should shed water and also hold water under reasonable pressure when "bagged."

In many sections of the country the rubber coated cover, rubberized on both sides, is used most generally in the larger departments where considerable work is necessary and covers are used frequently.

The green-back cover is rubberized on one side, with a green fabric on the other side. This cover when used, should always have the rubberized side up.

The duck cover, as said, is treated with a linseed oil compound. It will shed water, but it has the disadvantage in that it is sticky in the summer and stiff in the winter and therefore hard to handle. Also it may soil objects with which it comes in contact.

The regular canvas cover is composed of specially treated tightly woven canvas. This type apparently is the most generally used among the smaller fire departments; it is also quite extensively employed by some of the larger departments and Underwriters' patrols. It has the advantage of being light in weight, is easily handled and is sufficiently waterproof to meet most service requirements.

Further comparison between the different kinds of covers reveals that while the rubber covered type is watertight, it is about 25 per cent heavier than the better grade of canvas treated covers. It also has a tendency to slip from shelving and high piled stock. Some salvage corpsmen report it not as well adapted to bagging by rolling the edges which is said to be one of the reported drawbacks of some of the so-called plastic covers.

Some grades of rubber covers, when exposed to high temperatures, become soft and sticky, and may remain so. Under opposite temperatures they may become brittle and crack.

A reported disadvantage of even the best grade treated canvas covers is that they tend to leak under pressure after they have been used extensively. This is attributed to the wearing away of the waterproofing solution on them. They are said to be more difficult to patch and repair to make waterproof.

The duck cover treated with linseed oil will shed water but as said, tends to become sticky in hot weather and stiff in cold weather.

Some insurance corps and fire department salvage units balance up the advantages and disadvantages of the respective rubber and canvas type covers by using both, the type selected depending upon the particular application required. For small departments, which do little salvage work, the closely woven, treated cover appears to be preferable because of its light weight and ease of handling.*

A question frequently arises concerning the location of the "treated" or coated surface of a cover when it is folded or thrown over material to be protected. It is apparent that for the purpose of shedding water it makes little difference which side of the cover faces out. If the cover has been treated with a compound which tends to rub off or become "tacky" it would be wise to fold (and throw) the tarp in such a manner that the treated surface is not in contact with the material being protected. Where surface treatment causes no such hazard the main consideration is to be sure that cleanliness is the rule when the cover is folded.

Tyes of Cover Folds

Successful cover work depends to considerable extent upon the method of folding and carrying the covers. Improperly folded covers increase the difficulties of stowing and transporting them in vehicles, removing and carrying them to the place where they will be applied, and in "throwing" or spreading them. Therefore the importance of adopting the kind of fold and cover, most suitable for application by the respective department or salvage squad is a matter of selection.

There are several different salvage folds, and methods of folding salvage covers.

The four most widely used are:

1. The one-man fold, sometimes termed the "one-man throw fold" or the "one man salvage cover fold and carry."

2. The two-man fold, generally referred to as the "Underwriter's" fold or "standard" or the "two-man throw fold." Still another term for this is "two-man salvage cover fold and carry."

3. The accordion fold, otherwise described as the "accordion fold and carry."

4. The roll and double fold, also known as the "salvage roll and double fold" or the "one-man salvage cover roll" and the "donut roll."

It will be noted from the above that the name given the type of fold refers not so much to the actual fold itself as to

* A number of salvage authorities believe that with the development of new, lightweight but sturdy plastic materials, synthetic salvage covers will find a wide field of application. Already such covers are being tried out and with considerable success, if reports to FIRE ENGINEERING are to be believed. Adoption of these rather revolutionary covers, or sheets (both transparent and opaque) may call for revisions of certain techniques of folding, throwing, spreading and bagging. It would appear, however, that for a long time, there will be need of the water repellent tarp' or cover, now classed as standard by competent salvage authorities.

the "carry" or the "throw." Thus the "one-man fold" does not necessarily connote one-man folding operation but rather one man throwing or spreading the cover. It should be borne in mind also, that there are a number of variations of some of these folds, such as the "donut roll."

In the main, the folds in most general use today are the one-man throw fold, accordion fold, the one-man fold and the so-called standard or Underwriter's fold. This chapter is concerned with the first-named.

One-Man Throw Fold

This fold should receive particular consideration where manpower is a problem. It is again emphasized that the folding process is one in which the time factor is unimportant. Every effort should be made to do a good folding job because it plays such a big part in application of the cover on the fire ground. This is particularly true of the one man and the accordion folds.

The first step in the one-man fold is to lay the cover out flat on a clean surface and to remove all wrinkles. By sighting along the cover the long way, each half of the cover should be divided into halfs and then into quarters. The objective is to so fold the cover that the outer edges will be at the center.

As noted in the illustration (Fig. 1) one man places his left foot on the cover at the point where the fold will be made while his partner places his right foot at the same distance from the outer edge. Using the foot leaves both hands free to make the fold. Some authorities prefer to use one hand to mark the fold and the other to hold the cover. Turning the fold over the foot, however, as pictured, is the most widely used method. Using the foot, is easier to keep the main portion of the cover in contact with the floor while the fold is made. It also is easier on the back.

As the other edges of the cover are brought into the center, the sheet is stretched tight by the two men gently pulling toward each other. At the same time they smooth out any wrinkles that

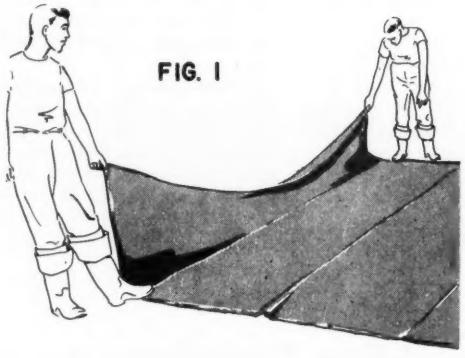


FIG. 1

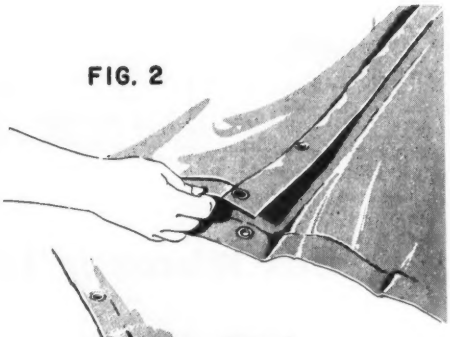


FIG. 2

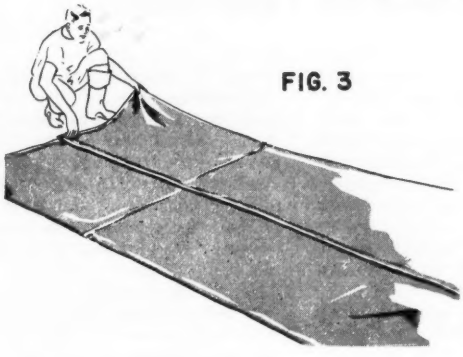


FIG. 3

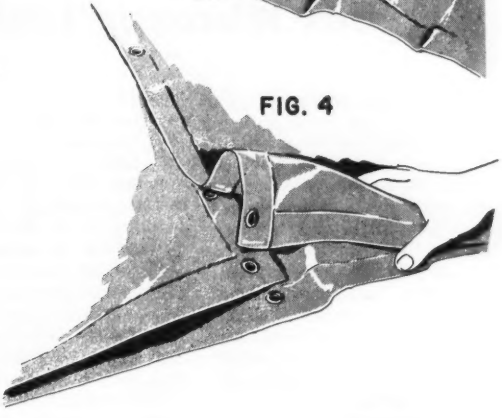


FIG. 4

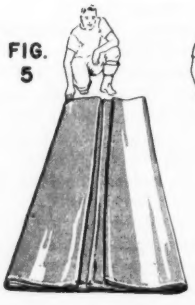


FIG. 5

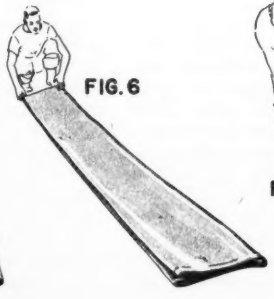


FIG. 6

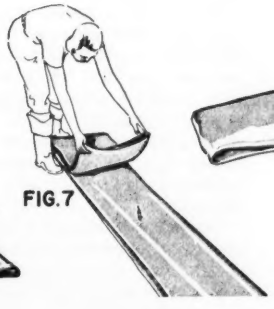


FIG. 7

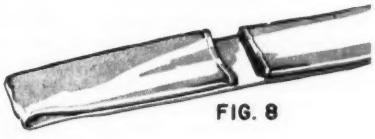
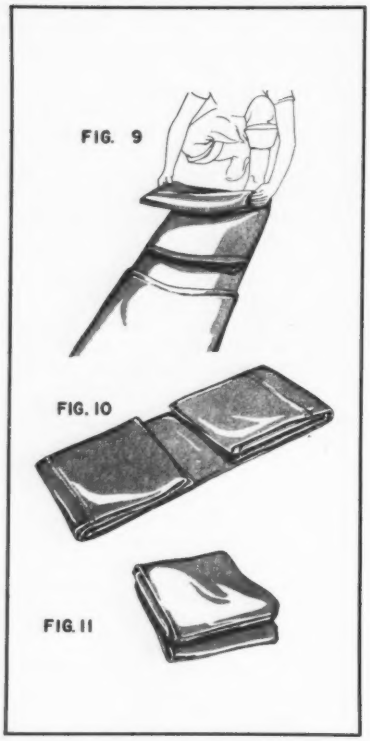


FIG. 8



may have formed on the surface of the material.

It is advisable to locate the grommets directly over each other, at the center of the cover, as shown in Fig. 2. It should be mentioned that in this fold, as shown, the side of the cover on the floor (the underside) will be that which will come in contact with the material being protected by the cover when spread. The completed first fold is shown in Fig. 3.

The second fold, also lengthwise of the cover, is intended to divide the first fold in half, and is done by laying the outer edge toward the center. At the center fold the grommets are also carefully aligned so they are in position one over the other, (Fig. 4). In this way the cover will be folded exactly in the center.

The next step is to again fold each side of the cover in half, as diagrammed in Fig. 5. Only one man is shown in the illustration although this is a two-man operation. The cover is kept flat on the floor and free from wrinkles by being stretched between the two men as in the first fold.

In making this fold it should be noted the two edges do not come all the way to the center, but there is a space of several inches left in the middle. The purpose of this space is to allow the next fold to be made with a minimum of bulkiness.

The third folding operation consists in laying over one completed fold on top of the other, as shown in Fig. 6.

The two ends of the folded cover are now folded toward the center as pictured in Fig. 7. Here, also a space is left between the two ends, again to eliminate bulkiness. After each fold the folded section is smoothed to remove all possible wrinkles. Position of the two ends is illustrated in Fig. 8.

The next step is to again fold the two sections toward the middle as shown in Fig. 9. When this has been done the completed operation will appear as in Fig. 10.

The final step consists in folding one section over the other, to bring the completed fold into a compact bundle as shown in Fig. 11.

The procedure of making this "one-man throw fold" as well as the others adopted by the salvage squad, should be practiced until all members of the squad are thoroughly competent in the operation.

Acknowledgement: *The editors are indebted to Mr. Robert Byrus, Director, Fire Service Extension, University of Maryland, College Park, Md., for the excellent illustrations shown in this chapter. These are taken from the University's "Firemen's Basic Training Course, Chapter Nine: Salvage."*

How Wisconsin Looks at Fire Training

The number of firemen in Wisconsin, it is said, approximates the size of an infantry combat division. Notwithstanding this fact, Wisconsin has never had a state program of firemen's training.

The infrequent instruction has been limited to two or three teachers giving in their spare time in-station training to a few nearby volunteer departments; the annual three-day fire college on the University Campus and two 18-hour officer's schools sponsored by firemen's associations and conducted by Emmet T. Cox and Harry W. Wolff of the Western Actuarial Bureau, Chicago.

Earlier, among some departments, the State Board of Vocational and Adult Education through Harry C. Thayer, Robert P. Welch and some local vocational schools, attempted an experimental program. In it were combined firemanship and teacher training.

The rotating host department of the group of eight with some outside help prepared the instruction plans on subjects such as ladders, hose, etc. The host department then demonstrated the respective subjects to and taught men from the other seven departments. Sessions were held about every two weeks.

The program was profitable and inexpensive. It opened up some of the dark corners in both firemanship and teaching. Unfortunately, the level of basic training was so low that chiefs and departments hesitated to attempt to teach others. Perhaps for this reason the plan was not repeated, and the void was more evident.

In successive sessions of the State Legislature, two appropriations for training were defeated. It was apparent that there were no sure, easy ways of adding a new, even if small, additional financial load on State finances.

This year, instead of starting at the center, the State Capitol, the volunteers are starting the hard way by explaining, selling and promoting the idea out in the State where the 600-odd Wisconsin fire departments are located.

As previously reported in FIRE ENGINEERING (March 1956, page 243), A council with elected officers, constitution and dues was formed of the thirteen area firemen's organizations in Wisconsin.

To help the volunteers in presenting to their legislators the need for a state appropriation, a sheet of ten selling points has been provided. There were also outlined ways by which firemen and their local departments could make their wishes effectively known to their assemblymen and senators, and to important legislative committees after the bill is introduced.

Sympathetic cooperation has been promised from two Wisconsin organizations of paid firemen and from the Wisconsin Association of Town Mutual Insurance Companies.

At a meeting in Madison on April 22, the officers of the council, the State Fire Chiefs and other firemen's organizations and representatives of the State Industrial Commission and of the State Board of Vocational and Adult Education, pooled their best thoughts in drawing up the elements of a bill to be presented to the Legislature in January, 1957.

The bill contemplates making training available to volunteer, paid and industrial firemen by:

1. Making available sufficient instructors, trained by the State Board of Vocational and Adult Education in firemanship and teaching, to provide in the local fire station evening classes of 30 to 60 hours and to be repeated every four to six years.

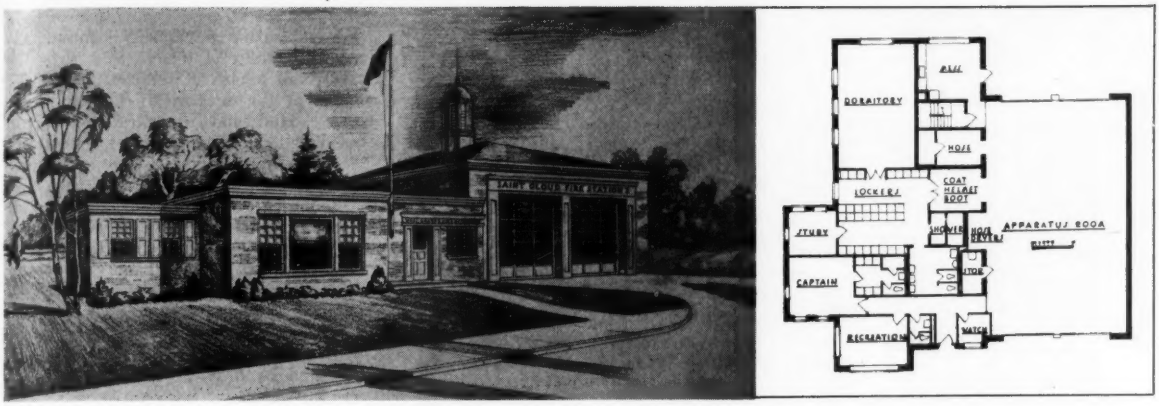
2. Establishing specialty schools in officership, teacher training, inspection and pumper operation.

3. Continuing the present State University fire college.

The provisions of the bill would be administered by a training board composed of six firemen, four from the volunteers and two from paid departments, all appointed by the Governor for staggered terms, and one representative each from the Vocational Board, the State Industrial Commission and from the Office of the Insurance Commissioner. The training board would select the full-time administrator.

In addition to the general supervision of training, it was suggested that the

Continued on page 531



Saint Cloud Fire Station No. 3—West Orange, N. J.

Beauty and Utility Feature New West Orange Fire Station

FIRE CHIEF Leo Coleman of West Orange, N. J., has been living with fire stations for many years, and like most veteran chiefs, he has a keen awareness of what a fire station should be. Therefore, when funds for a new fire house were approved, the Chief was ready with recommendations. After a series of conferences with Fire Commissioner Edward Roos (presiding), Architect Robert P. Moran and his staff, the Chief's suggestions were carefully considered even before the blueprints were made.

The new station is designed to house two pieces of apparatus with sleeping quarters for 36 men assigned to the station on a rotating basis. In addition, off-street parking for firemen's cars is provided. The arrangement of the building lot with road provides for head-on returning of the trucks from a call. This saves time getting into position and avoids traffic delays. The building is set back from the curb so that the driver can observe possible traffic interference in the street. Special traffic lights are automatically set against traffic when apparatus is responding.

Ground moisture barrier

The house is one story, set on concrete slabs, insulated from ground moisture by a polyethylene plastic film laid on the earth before the concrete was poured. The cellar is limited to a boiler room with space for the emergency generator. The plot is pleasantly landscaped to please firemen as well as the neighbors in this residential area.

The entrance to the building is reached over a curved flagstone walk. Alongside the door is the night light and "citizens bell" so that persons can rouse the house in an emergency. From the front door, an entry hall, flanked by a glass partitioned watch office, leads to a cross corridor. The apparatus room is open to full view from the corridor. A unique and useful feature is a rest room for visitors, which is located near the front entrance.

The officers' quarters are moderately isolated from the crews' quarters. This is done more from a business point of view rather than to obtain any social stratification in the station. It is believed the ranking officer must have a certain amount of privacy for the purpose of discussing personnel problems. To further such privacy, the captain's office-bedroom has its own locker room and shower. A recreation room is provided in the front exposure with ample window space. The station design provides every occupied room in the living quarters with two outside walls and windows for light and cross ventilation.

The apparatus floor is fitted with drains for use when washing down equipment. An alcove for storing boots, coats and helmets, forms the approach to the crew locker room from the apparatus floor. The passage and doors from the dormitory to the apparatus floor have a minimum width of five feet for double file exodus. Each man is provided a clothes locker with a section above for his bed clothing. The crew shower room with dressing entry is adjacent to the locker room, off which in a more isolated location, is a study room. The kitchen is fully equipped with all modern facilities and space for a mess table.

Ventilation designed to effect complete air movement

Mechanical ventilation is provided for wash room and locker room. Sufficient air movement is assured to effect summer cooling as the air exhausted from the locker room is replaced by air passing through the dormitory. The apparatus room is ventilated at floor level by an exhaust fan, which operates manually or automatically with the opening of the doors, and is stopped by time delay relay after the doors close. The cupola on top of the building houses a dampered ventilator to cool the apparatus area in summer. In an alcove off the apparatus floor are two electric hose dryer units. A storage room with coil racks for hose and a closet for sundry supplies are provided.

The higher cost of non-combustible construction is offset by using an acoustical roof deck which eliminates finishing of the ceilings. Plastering is required only on the walls of the living rooms. Glazed colored tile is used in the apparatus room, shower rooms and corridor, to the height of the doors.

A gasoline pump is available for fueling at the rear truck entrance. A convenient water tap facilitates removal of mud and ice before trucks enter the building. An air compressor with long reach hose reels and heavy duty battery chargers provides for ease in servicing tires and batteries.

Shaken but uninjured, Chief Schick walked away from this wreck

Safety Belt Saves Chief from Injury

Dramatic and convincing evidence of the wisdom of equipping fire vehicles with safety belts is furnished by the harrowing experience of Fire Chief Lester R. Schick of the Davenport, Iowa, Fire Department.

The story is best told in Chief Schick's own words:

"Enclosed is a picture of my chief's car, a 1955 Mercury, after an accident and terrible tragedy in which a friend of mine (a pedestrian) lost his life.

"On Monday, April 23, while responding to an alarm, my car collided with another at an intersection in the west part of Davenport. I then crashed head-on with a telephone pole, snapping it off. The right front of the car then struck a tree three feet in diameter.

"I was able to jump from this car and assist in directing the emergency operations at the scene. I want to thank your publication for this fact. I was uninjured though badly shaken.

"Sixty days ago, after reading several articles relating to the installation of safety belts on fire apparatus, we made such installations on every unit in our department.

"There is little doubt in my mind that I would have been unable to write this letter, as a result of serious injury or death, had my car not been equipped with safety belts.

"I should like to urge every fire chief, charged with the responsibility of protecting his personnel, to seriously consider the installation of safety belts on all fire apparatus. I thank God that I made such a decision.

"I also feel that this incident supports the reasoning that chiefs' cars should be of a heavier type vehicle to protect occupants in case of accident.

"Again my sincere thanks for continually calling to our attention innovations that are a distinct asset to the fire service and fire service personnel."

Editor's Note: It is not always given to a journal such as FIRE ENGINEERING *to receive such direct, tangible evidence of the way in which its editorial and advertising contents are absorbed and assimilated and its recommendations followed. In acknowledging this frank message, we assure Chief Schick, and our other readers, that it will always be the policy of this publication to advocate and promote with all its vigor those innovations which will mean greater safety and efficiency to the fire fighters of the nation.*

Fireboat Design Provides Novel Features

Plans for an 86-foot steel hull fireboat capable of pumping 9,000 GPM of water at 150-pounds nozzle discharge pressure have been developed by George E. Meese, Naval Architects & Marine Engineers, Annapolis, Md.

With independent propulsion and pumping engines, this twin-screw, diesel powered vessel provides complete living facilities for 10 men and is able to fight fire at maximum capacity continuously for 72 hours.

Overall length of the craft is 86'-2"; beam at the deck is 25'-4"; and draft, 6'-4". Hull and superstructure are of welded steel. The hull has four transverse, oiltight bulkheads and one transverse, watertight bulkhead.

In order to permit immediate moving away from another vessel or pier without excessive maneuvering, the hull has full and elliptical sides without any parallel middle body. The deck is flush for ease and safety while working.

Galley, toilet and shower are supplied with both hot and cold water. Air conditioned and heated quarters are provided for the crew.

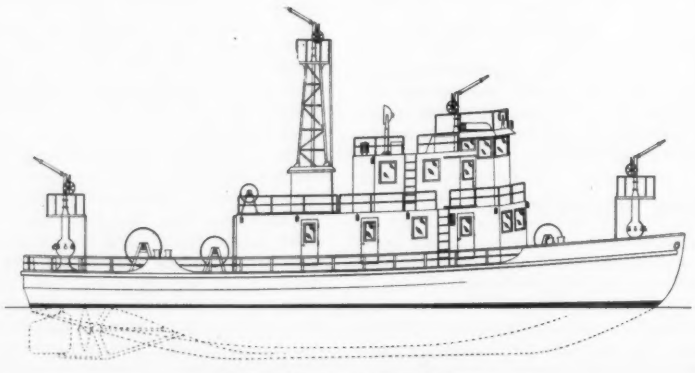
Two Fairbanks-Morse 38F5¼ heavy duty basic marine engines are the pumping units. Each engine is provided with fresh water cooling with individual heat exchangers, discharges, circulating water pumps and accessories. Each engine is entirely independent of the other and has its own air supply blower, lubricating oil system, fuel system, temperature control system, governor, exhaust system, controls, alarms, instruments, and pumps.

Two Dean Hill 10" centrifugal fire pumps produce 4500 GPM each at 175# pressure. The pumps also can be operated in series by means of valving so the total pump output can be 4500 GPM at 350# discharge pressure.

Four monitors are located at the bow, pilot house, tower, and stern. All the monitors are rated at 2140 GPM with 2½" nozzles. The bow and stern monitors may be fitted with tips up to 4" and, with this size and 150# discharge pressure, will be rated at 5500 GPM. The pilot house and tower monitors may be fitted with tips up to 3" and with this size and standard discharge pressure will be rated at 3100 GPM.

The four hose reels are mounted on turntables for directing the hose in any direction for easy laying. One reel for 900 feet of 3" hose is located on the main deck aft. Two reels for 2½" hoses, each with a capacity of 600 feet of hose, are located forward and aft on the main deck. A fourth reel for 400 feet of 1½" hose is located on the bridge deck aft.

Under-dock fire fighting also is in-



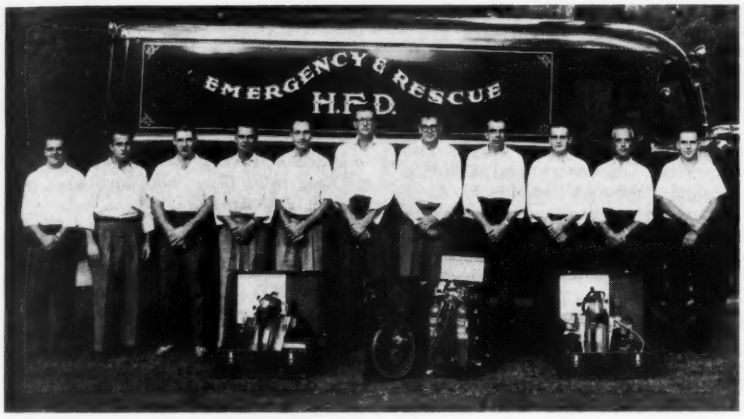
Outboard profile of new fireboat

cluded in the design. The rail around the main deck has special portable attachment brackets on the underside of the cap for mounting cellar pipes for use in fighting low fires such as under piers.

Two Fairbanks-Morse model 38F5¼, 413 HP diesel propulsion engines give an estimated speed of 13.8 MPH. Specifications also call for two United States Motors Corporation auxiliary engines with 10 KW, 110 volt AC, 60 cycle generators, air compressors and bilge pumps for general service.

Pumps on auxiliary diesels are arranged with manifolds so that any or all can be operated at one time to pump bilges, transfer salt water ballast, or to strip the fire main.

Volunteer Rescue Squad Serves County



Hillsdale County rescue car with squad members lined up in front: (Left to right) Lt. John Underwood; Bob Ferro; T. Wickham; George Woods; Art. Hammond, Secretary; Jack Hall, photographer; Henry Evans; Harry Payne, treasurer; Captain Bud Van Hoen; John Laird and Duane Lovejoy. Not shown are Ed. Lockwood, Al States and Dr. Tropp, and the four drivers, Fletcher Bishop, George Whitson, E. Gaberdiel and Dilbert Ellis

The Hillsdale County (Mich.) Rescue Squad was started by four men on July 1, 1950. Actually, what the "four horsemen" set out to acquire at that time were funds to purchase a resuscitator. They got it, with money enough left over to buy a portable cutting torch. They were thus in business.

After the first few calls to duty, during which time, incidentally, they saved two lives, interest and attendance in the squad and its activities picked up. More contributions were received, supplementing the funds raised by subscription and by just plain selling of the organization to the good people of the neighborhood.

As a detail of this enterprise, every year the company has a large plot of ground loaned to it, which the lads operate as a parking lot. Recently the company conducted a "ham dinner" which netted the tidy sum of $450.

Much of the success of the dinner and other fund raising affairs, is attributed to the ladies' auxiliary. The wives of the members lose no opportunity to help finance the squad's projects.

The squad has advanced a long way since 1950, as Squad Captain Van Hoen puts it: "Starting with four men, a resuscitator and a cutting torch, we now have a total of four drivers and twelve men, all members of the squad."

All members are volunteers.

The City of Hillsdale houses the squad's truck and equipment, insures the men and equipment, and provides the gas and oil. All other expenses are met by donations. The services of the squad are offered without charge.

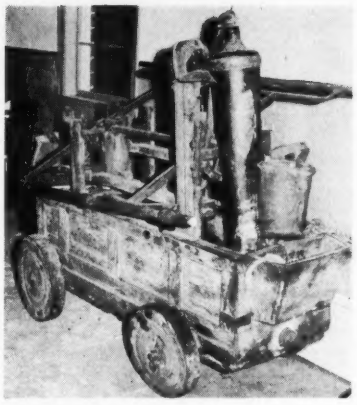
The Hillsdale County Squad cooperates with adjoining counties, answering calls from areas left unattended, on a sort of mutual aid basis.

Training is an important factor in the success of any first aid squad, and the Hillsdale members train at all times. In addition, the squad has layouts of most of the industrial plants in the area and members are familiar with these layouts as well as with locations of hospitals and other important centers. The personnel trains in all phases of rescue work, first aid and medical treatment. The squad numbers among its members a doctor who was appointed by the Hillsdale County Medical Society. He has proved helpful in the training of the members. The squad makes use of all possible available films in its training program.

One of the most valuable sources of information, Captain Van Hoen informs FIRE ENGINEERING, is the "Fire Rescue Manual" by Joe Mahaffey, which ran serially in this journal and is now available in book form. Every member of the squad has one of these manuals for his own use.

The unit answers many calls each year for such emergencies as heart attacks, strokes, drowning, electrical shock, fires and accidents of all kinds. Recently the squad stood by at an airport air show when an airplane crashed off the airport. The unit was on its way to the scene almost before the plane hit the ground.

Like every other live rescue squad, the Hillsdale boys are not resting on their laurels, or their finances; they are out win more of both.



Is This Engine the Oldest Existing Relic?

Said to be one of the oldest fire "engines" in this part of the world, this old "hand tub" was presented 169 years ago to the Shelburne, Nova Scotia, Volunteer Fire Department, by King George III of England.

The engine measures about 6 feet in length and 2½ feet in width. The hose, such as it was, bucket and helmet, shown on top of the post, are all made of leather.

When responding to a fire call the machine was drawn by hand. It was operated by pouring water from the nearest available source into the reservoir in the bottom of the device. Two men on either side worked the pump bars, or "side brakes" up and down, forcing the water out of the top of the pump (the cannon-like cylinder in front with hose coming off the top).

As can be imagined, there was little pressure, and the "stream" hadn't much range.—*F. E. Ericson*

Delayed Alarm— 24 Families Homeless

It doesn't happen often but the results are always the same when no one notifies the fire department of a blaze. In New York City on April 20th, tenants of adjoining buildings noticed a fire at 138 West 117th Street but apparently thought fire apparatus was on the way. Twenty minutes later Fire Alarm Headquarters received a telephone call at 9:36 a.m. for the five-story apartment house. Within 28 minutes four alarms had been sounded for the fire which eventually gutted two apartment houses and damaged two others.

The fire was caused by an overheated ironing board which had been left against a bed in a first floor apartment. Within minutes it had involved the apartment and spread up an airshaft to the adjoining apartment building at 140 W. 117th St. Eventually the upper floors of Nos. 134 and 136 were involved.

Three firemen and an 81 year old woman were injured slightly. An off-duty fireman, Frank Clark, led several children to safety. As a result of the damage 24 families were left homeless.

—*Photo by K. B. Ridley*

Former Deputy Chief John Waldron, a Past President of the Eastern Association of Fire Chiefs installs the new officers. They are, left to right, Chief Edwin J. Clark, Secretary; Chief L. Ellis Wagner, retiring President; Chief Lewis Zimmer, President; Chief Edward McDonald, First Vice-President; Deputy Chief F. Lee Cockey, Second Vice-President and Clarence Dougal, Treasurer

Eastern Association Meets

The 29th Annual Conference of the Eastern Association of Fire Chiefs was held May 7 through 9 at the Hotel Sheraton, Rochester, N. Y. Chief Walter J. Adams and his Rochester staff drew warm praise for the excellent conference arrangements.

A highlight of the three-day program was the demonstration of training and fire fighting at the Rochester Fire and Police Academy. A class of 22 rookies displayed their proficiency under the direction of Deputy Chief John F. Hurley. An inspection of the Maintenance Shops followed with Deputy Chief Louis E. Vogt in charge.

Officers elected for the 1956-57 term are: President, Chief Louis Zimmer, Maplewood, N. J.; First Vice-President, Chief Edward J. MacDonald, White Plains, N. Y.; Second Vice-President, Deputy Chief F. Lee Cockey, Towson, Md. Chief Edwin J. Clark, Wayne, Pa., was re-elected Secretary and Clarence H. Dougal, re-elected Treasurer.

Prior to adjournment, an invitation to hold the 1957 Conference in Baltimore, Md., was extended by Chief Michael H. Lotz. The assembly voted to accept.

Greetings from the International Association of Fire Chiefs were extended by B. Richter Townsend, Secretary-Manager. Among those that addressed the assembly were: Allen L. Cobb, Safety Director of Kodak Park and Past President of the NFPA; Chief Ward Bohner, Secretary-Treasurer, New York State Fire Chiefs Association, Colonel Robert N. Abbot, CD Director of Monroe County and Charles Pottes, Counsel, New York State Legislative Committee on Fire Laws.

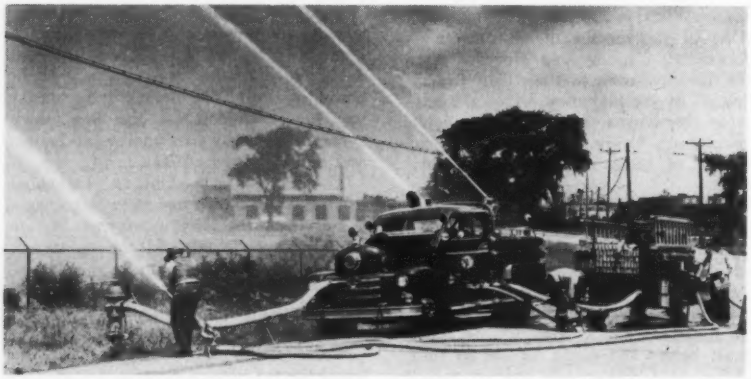
The ladies in attendance were treated to a full program of activities including a fashion show and a bus tour.

Tandem and Relay

Relaying of water is used by fire departments to overcome the problem of friction loss in long hose layouts. The word "relay" seldom causes difficulty to anyone, as the terminology is accepted throughout the fire service. However, the word "tandem" seems to have varied meanings, depending on the part of the country in which it is used. FIRE ENGINEERING pointed out in the October, 1955, issue, that it has been the practice to consider two pumpers side by side with the discharge of one hooked directly to the intake of the second, which then supplies the lines, as being in "tandem." This description is consistent with the dictionary definition *Consisting of two arranged one behind the other . . . origin of . . . horses so harnessed and so driven instead of abreast.*

In some areas of Wisconsin, the term "tandem" has been applied to a pumping operation designed to take advantage of good water flow. One pumper is hooked to the hydrant to be used and supplies its own lines. The intake of a second pumper is connected directly to the unused suction connection of the first pump. The second engine supplies its own lines with water taken from the intake chamber of the first. Thus advantage may be taken of the larger bore of suction hose and the greater capacity of the intake chamber. It is important to point out that this method can only be used with hydrants that have sufficient flow to accommodate both pumpers.

Editor's Note: The explanation of this operation does not fit the description of "tandem." In the interest of standard terminology for fire service operations, perhaps some thought should be given to a logical and fitting name. We would like to hear from those who have used this system of hooking up.



—*Photo by Stuart Klinger*

Fire Chief John Pavlik of West Milwaukee, Wis., is an advocate of this method of using two pumps at hydrants with sufficient flow. Note the use of supports for the suction hose

Norwich, Conn., Church Burns as 300 Worship

Fire destroyed Sacred Heart Church at Norwich, Conn., on April 29, causing damage estimated by fire officials at half a million dollars. The fire broke out shortly after the 8 o'clock Mass started. There were 300 people in the church.

Sexton Michael LaMothe, one of the first to notice the fire, saw smoke coming from the sacristy, a room off the altar. He informed the Rev. Rene Messier, who had just started to read the weekly announcements. Father Messier quietly advised the congregation to leave the church. There was no confusion.

The Rev. Maurice Sullivan, assistant pastor, and Deputy Fire Chief William LaRochelle estimated the damage at $500,000. When Mr. LaMothe, the sexton, became aware of the fire, he stood up and pointed to the rear exits. The parishioners started filing out.

One Norwich fire fighter, Norman LaFond, was sitting at the rear of the church. He walked to the front and opened the door to the vestryroom. The room was a wall of flames. By this time the church was nearly empty.

Twenty pieces of fire apparatus responded to an alarm of fire sent in from a nearby street box. Firemen from Willimantic, New London and Groton joined Norwich fire fighters and battled the flames for three hours. The fire burned out the interior of the church and left only the smoke-blackened brick shell.

Father Messier stated that the lights dimmed and the electric clocks on the church tower stopped a few minutes before the fire was discovered. Fire officials said this led them to believe that a short circuit touched off the blaze.

On May 2, three days following the fire in the church, fire broke out in the basement of Sacred Heart convent, adjoining the church. Sister Francesca, one of about 25 nuns occupying the convent, discovered the second fire at about 5 a.m. Norwich firemen quickly extinguished the fire and the nuns left the convent in safety.

Tom Magner

The Sammons fire headquarters and apparatus

Private Fire Department Protects Suburban Area

One of the very few "commercial" fire departments in the United States is Sammons & Sons Fire Service, of Billings, Mont.

The business was started in April, 1954, after a severe fire loss at a furniture store outside the district covered by the Billings Fire Department, to provide needed fire protection on a subscription basis.

Billings, like many other rapidly spreading communities, has a problem of extending its fire protection services to its fringe, or suburban areas. City fire companies cannot fight fires beyond the city limits. The county fire fighting equipment is built up with funds allocated to fighting range, forest and grass fires; no funds are available for fighting structural fires in the area.

One of those who has watched the growing fire suppression problem in Billings was D. C. Sammons who, with B. K. Terry, founded the Sammons & Sons Fire Service, Inc., a private fire company, when it was determined that property owners in the unprotected area would contract for fire protection on a subscription basis.

The Sammons Co.'s first act was to purchase a 750 gpm pumper, which was put into commission December 1, 1954. In April, 1955, a new tanker was installed. This carries 1800 gallons of water and a full complement of fire equipment.

Then came the emergency car, equipped with ambulance cot. All three units are radio equipped, using the frequency of the Billings Fire Department.

Since December 1, 1954, Sammons & Sons fire forces have fought 54 fires that occurred outside the city limits. It is estimated that $300,000 has been saved through these operations. One woman and a man are alive today because the Sammons crews reached them in time with oxygen equipment.

Sammons and Sons are veterans in fire fighting, with a total of 38 years experience in municipal fire departments. Personnel of the company consists of 40 volunteer call men. Two paid firemen are kept at the fire station 24 hours a day.

According to D. C. Sammons, the company sells its service to property owners at one dollar per $1000 replacement value. Contracts for their services for the next five years have been signed by many property owners. Each one engaging the company's fire fighting facilities receives an identification plate which is mounted on the outside of the building to be protected, much in the fashion of the old "hall marks" placed by early insurance companies of the nation on properties carrying their insurance. The company makes up a list of properties to which its units rolled to in the past year and this is sent to the taxpayers to show them the extent of the operations of what is one of the very few commercial fire departments in the nation today.

County Contracts for Fire Protection

Kerr County, Texas, commissioners have approved a city-county contract based on past history of rural fire protection outside Kerrville city limits.

The contract calls for payment by the county of 35 per cent of the cost of operating and maintaining the city's fire department during the previous fiscal year. Costs borne by the city in 1954-55 amounted to some $21,863; the county's obligation of $7,552, according to terms of the new contract, was determined by a comparative survey of inside-and-outside-city fire protection services presented along with the proposed contract, to the commissioners court for its consideration.

The county's action in accepting the contract is said to have culminated perhaps the most comprehensive effort of a city thus far to solve the problems, financial, moral and legal, inherent in many cities which now receive token payment or equipment donations from their counties.

It is said that several Texas cities, among them Midland and Denison, have abandoned rural protection service during 1955 because of prohibitive costs and the failure of counties to contribute a share.

Kerrville laid some convincing groundwork before requesting the county participation. City Manager W. J. Pitstick prepared a full report detailing in four parts the current condition of the city's fire department and giving comparative figures on inside-and-outside city fires over a three year period, legal and moral responsibilities, and a proposal for future cost-sharing.

Fires outside the city limits over the three-year period averaged 35 per cent. Miles traveled in rural areas, one of the most practical indexes for the purpose of the study, averaged 77 per cent. For this sort of protection the report noted, the county had paid the city a flat sum of $500 per year (2.4 per cent of fire department expenses).

Generally, the theme of the report pivoted on responsibilities of the city, county, and to the citizens living inside and outside the city limits. The city created a moral obligation for its erstwhile protection of rural areas but denied legal obligations and pointed out that legally the city was endangered each time fire department personnel and equipment left the city.

It was doubted for example, that government immunity for torts, applicable to city fire departments, would apply outside city limits without a city-county contract for fire protection. From another angle the report noted the possibility of city liability for fire losses suffered inside the city while part of the equipment was outside the city. Insurance rates were apt to be affected also.

The report set out a number of methods by which counties might participate in the costs of rural fire protection (based on Texas law). The contract method, through which the county was permitted to pay for protection of city personnel and equipment was thought more suitable for Kerrville's circumstances than any other.

"The essence of the problem," wrote the City Manager, "is not to weaken the fire fighting facilities of the governmental unit that pays for the fire department to aid one that does not."

From the facts embodied in the report came the proposed contract, later accepted, which pledged Kerrville's protection of the entire county for one year, in return for a payment of 35 per cent of the previous year's cost of maintenance and operation. Future equipment plans which awaited acceptance of the contract by county commissioners are now in order (Dec., 1955). Kerrville planned to equip a truck specifically for county runs and to convert one of the city's 500 GPM pumpers for use in the county as soon as a 750 GPM pumper could be purchased to replace it—*Abbreviated from Texas Municipalities, Dec., 1955.*

Religious Bar To Firebreaks

The Los Angeles Fire Department was pressing a four-count complaint against a Studio City resident who refused to cut firebreaks around his mountainside home.

The defendant told firemen his religious principles held that he could not destroy anything that lived, including shrubs and other plant life surrounding his home.

The L.A.F.D.'s complaint charged Timmsen maintained a fire hazard and failed to clear a 30-foot firebreak around his home as required by law. Attorneys for both sides were to file briefs as Municipal Judge Morton L. Barker took the case under submission. ***Paul C. Ditzel***

The M. Backes & Sons Fireworks Company plant at Wallingford, Conn., which was destroyed by fire following explosion on March 29. Damage was estimated at $100,000

Fire Plays Return Engagement

Explosions and fire tore through several buildings of the M. Backes & Sons Company Fireworks plant at Wallingford, Conn., on March 29, causing damage estimated at $100,000.

One employee, Michael Gust, was badly injured and taken to Meriden hospital. Two other employees were less seriously injured. Firemen heard three explosions and sped to the plant without waiting for an alarm. Flames fed by the highly combustible fireworks materials roared through the sparkler plant, a building used for making caps, and a storage building. Cause of the fire was not immediately determined.

Less than four years ago an explosion and fire at the same plant killed one worker and injured several others.

Tom Magner

Volunteers Get Complete Department in Quick Time

In May, 1953, the residents of the District of Idlewild, N. Y., were told by the Menands Fire Department, which at that time provided protection for the District, that the Menands Fire Department, could no longer furnish the desired protection.

It didn't take long for the Idlewildians and citizens of the neighborhood to call a meeting of all hands, the object being to see what could be done to secure adequate fire protection.

When the reasons why Menands could no longer protect the District were told them by Fire Chief Jensen, the Schuyler Civic Association was organized, with Lloyd De Maranville as president.

One week later, a committee was appointed to draw up by-laws to govern the association. At the next week's meeting those by-laws were approved and a board of trustees elected.

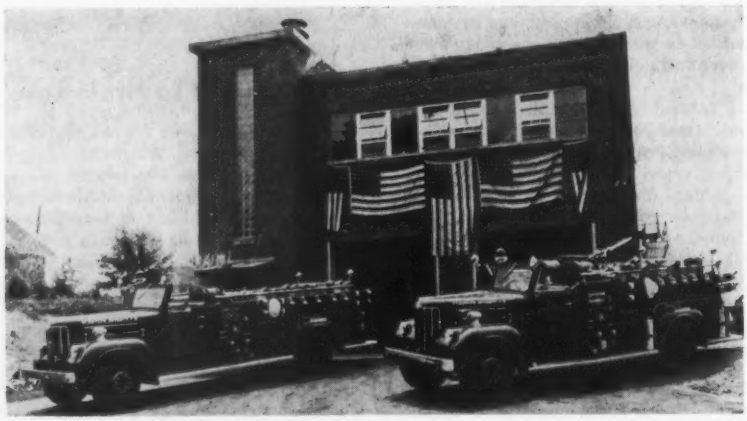
At the January, 1954, meeting, the president appointed a committee to investigate ways and means to organize a fire department. It was even worse than trying to organize a new business—most of the organizers knew something about business, but they knew little or nothing about building and maintaining a fire department.

The committee secured the services of William O'Neil as legal advisor to the group, and a board of fire commissioners was then appointed, in accordance with town law.

The commissioners held their first meeting on May 14, 1954, at which time a chairman and secretary were elected. The commissioners met every week for a year, during which time the problems of forming and equipping the fire department were all solved, one by one. In fact, many of them were solved at one fell swoop. Thus, instead of deciding to build a department piecemeal, they went ahead for bids on two 750 gpm pumpers and construction of suitable housing for them.

They didn't go at it blindly, if speedily. They had the best possible advice. They employed a capable architect; had designs prepared, costs figured. They then signed a contract. Meanwhile the fire company was organized.

Today, the fire station is complete. It is home for two pumpers with all the trimmings. Schuyler Heights is now a recognized fire fighting unit of Albany County, New York.



Modern fire station and apparatus of Schuyler Heights, N. Y.

What Does a Volunteer Fire Department Do

Some idea of the operations of a typical volunteer fire department may be had from the terse annual report of the Vienna Volunteer Fire Department of Vienna, Va.

During the calendar year 1955, the department answered 156 alarms of fire, 72 within the town, and 86 outside. The total manpower response was 2515, an average of 16 men per call.

The category of "public service" calls included such tasks as pumping out basements, washing down roads after accidents, locating lost children, etc. A total of 279 men responded to the 35 such calls, an average of six men per incident.

The Vienna Rescue Squad answered 305 calls, over half of them of an emergency nature for which the unit traveled a total of 8,928 miles, an average of 29 miles per response. DeWitt Crickenberger is Chief of the Department.

Where Integration Fails

In Lake Geneva, Wis., police accompany the fire department on calls. This is what happened December 7, 1955, according to an Associated Press dispatch, and shows in real life how an enterprising bank hold-up robber gets the police department out of the way when he wants to stage a bank robbery in a town where the police have fire department duties.

The news item read: "A gunman with a flair for details welcomed nine employees of the First National Bank to work today, locked them in a vault one by one, and escaped with a packing box of currency estimated at more than $100,000.

"As other employees arrived, the gunman directed them into a vault used for storing records. While waiting, he disconnected all but one telephone *and used that to turn in a false alarm, giving an address at the other end of this resort city.*" (The italics are ours, Ed.)

Our Readers Write Us . . .

Foam for Protecting Exposures

To the Editor:

One phase of fire fighting which has, I believe, been somewhat neglected is the tremendous value that the application of foam has for the protection of surrounding buildings from radiated heat.

As a great believer in air foam from its early inception, when many firemen eyed with scepticism its value, I have kept a close watch on its application for Class B fires as well as this comparatively new use of applying foam to a nearby building to protect it from a burning structure.

Now that foam equipment is practically a "must," on the modern fire apparatus, it seems that in addition to its use as a Class B extinguishing agent, the use of this modern piece of fire equipment as an insulator should be more widely known and accepted.

Even small quantities of water combined with very small percentages of foam concentrate will produce large quantities of fire smothering or insulating foam. Thus the booster tank has greater use in the rural communities with the addition of foam equipment than it has had heretofore.

Harold H. Rodda
Newton, N. J.

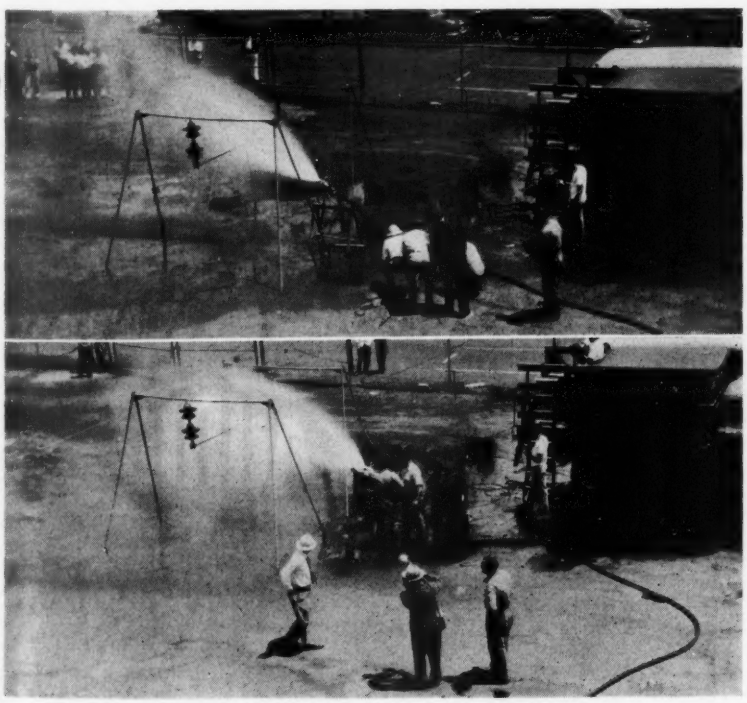
The Use of Fog on High Voltage Wires

To the Editor:

In a recent issue of your magazine there was an inquiry as to the danger connected with the use of water fog on electrical fires. I believe the enclosed photographs will bear out your answer that there is little danger in its use if a little caution is used.

These photos were taken by myself at the 14th annual Connecticut Fire College, held in June, 1955, at the drill yard of the New Haven Fire Department.

The demonstration was under the direction of Stanley Young of the Hartford Electric Light Co. A facsimile of a transformer was set up, as seen suspended from the pipe frames, and a steel bar suspended from insulators. This was connected to a generator set up in the truck seen in the background. The pipe on the 1½-inch hose line was strapped to a wooden horse and there were meters attached to the play pipe, and another attached to a metal pipe set in the ground, discernable in front of the play pipe in Figure 1. The voltage was stepped up and readings given at intervals until there were 60,000 volts being generated and passed through the pseudo transformer. At no time were the readings enough to have caused injury. Figure 1 shows the pipe set a distance of approximately five feet, and the group are reading the meter at the pipe. Figure 2 shows Captain Frank Sweeney, with one hand on the pipe and the other hand in the stream, and with both feet in the water that has run off, with shoes on, not boots. At this time there were the full 60,000 volts going through the transformer. Next to Captain Sweeney is Battalion Chief Andy Flanagan, and the fourth man is Chief Collins, all of New Haven. The third man is not known.



Figures 1 and 2

The chief danger involved here would be if a man got too close to where the water had run off; then if he were to walk where the run off formed a solid stream from the charged object, he might become the "ground" for the charge. But it was a pretty good demonstration that if the pipe was kept back at least 10 feet, and care was taken to keep away from any run-off from a charged object, there was very little danger.

John A. Morris, Captain,
Natick, Mass. Fire Department

Ambulance Attributes From Abroad

To the Editor:

I was particularly interested to read your editorial in the March edition of your very excellent Journal—FIRE ENGINEERING—on the subject of Fire Departments operating a Public Ambulance Service.

Considering the benefits which both the public and the Service accrue from such a "marriage", it has always been astonishing to me that so many Chief Officers of the Fire Departments reject proposals for their Service to provide a Public Ambulance Division.

Both your editorial and the article, "Ambulance Service—An Asset", present the case clearly and with advantage. The questions to be answered should always be, in my opinion, (a) will the public benefit? and (b) will the Service and its fire fighting department be adversely affected?

The answer to (a) can surely never be in doubt. The fireman and his department provide all the attributes necessary to a speedy and effective Ambulance Service; the answer to (b) is not quite so definite, but I consider that the one great advantage which you have not referred to, and which outweighs, in my view, any disadvantage purely on its own merits, is topography. It is my opinion that in recent years, probably due to the rapid development of Fire Service Departments, that the members of them do not have, as they did in the old days, the detailed knowledge of their fire coverage areas. In England, in the old days, this knowledge was acquired through the routine inspection and testing of public fire alarms, and the routine inspection and

Continued on page 502

This dramatic report . . . in Chief Owen's own words . . . reveals why Fire Chiefs who have had experience with Audio Hailer, **urge other** Dept's to adopt them. With Hailer, you can ***"make yourself HEARD"*** . . . project your voice to individuals or groups . . . with the power and authority to cut through the racket. Audio Hailer is the **ONLY** electronic megaphone that contains a genuine vacuum-tube amplifier. It operates on self-contained, dry batteries—weighs only 5½ lbs.—yet amplifies speech 1000 times! Let Hailer speak for itself:—for full details, or field demonstration, use convenient coupon below.

Audio Equipment Co., Inc.
Great Neck, N. Y.

"Only through use of A were we able to c

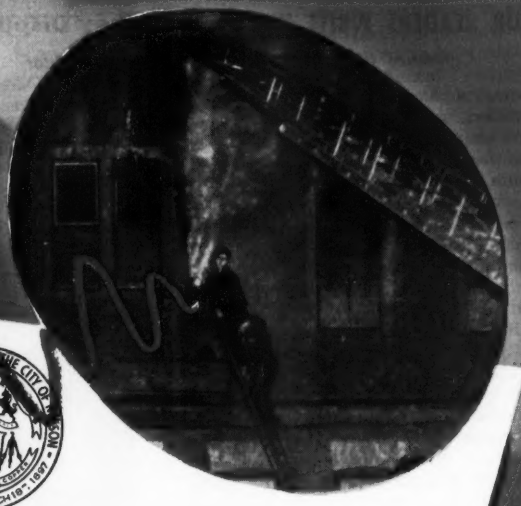
—ONE FIRE CHIEF TELLS A

CHIEF ELWIN S. OWENS,
City of Nelson, B. C., Fire Dept.

AUDIO
HAILER®
PORTABLE, SELF-CONTAINED

Audio Hailer "control panic"

...ANOTHER...



City of Nelson, British Columbia

OFFICE OF
CHIEF OF FIRE DEPARTMENT

Mr. William H. Short, Fire Chief
City of Lethbridge Fire Department
Lethbridge, Alberta

E. S. OWENS, CHIEF

Good-day Mr. Short:

In reply to your inquiry, I most highly recommend Audio Hailer (megaphone) to all fire dept's.

Two months ago, I felt improvement to the signal system was necessary. I contacted Audio Equipment Co., who forwarded one self-contained, hand portable model (Hailer).

Exactly two days after the megaphone arrived, we incurred a large hotel fire in which we lost six lives. Upon arrival at the fire, men, women and children were hanging from the windows, screaming, etc. Only through the use of Audio Hailer, were we able to calm and control the panic, instructing the people to "hang-on" and not to move, as we would complete their rescue in time to save their lives, or serious injury. As a result 50-odd people were rescued without injury, and believe me, the injury list could have been large and serious. To give you an idea of how serious, one victim dropped just prior to our arrival, and received a broken back.

The above is not the egotism of a fire chief, but concrete facts. I can assure your department, you would more than be satisfied, if you include this versatile unit with your most up-to-date fire fighting equipment.

Very truly yours,

Elwin S. Owens

Background photos of Strathcona Hotel disaster, courtesy of Nelson Fire Dept.

Saves Lives!

ELECTRONIC MEGAPHONE

(Just Clip to your letterhead, or paste on post card)

AUDIO EQUIPMENT CO., INC., GREAT NECK, N. Y.

I would like ☐ Brochure
☐ Demonstration of Audio Hailer

FIRE CHIEF_____

CITY_____ STATE_____

OUR READERS WRITE US . . .

Continued from page 499

testing of fire hydrants. In the former instance, most English Fire Authorities have abandoned the fire alarm system, so this medium for learning the shortest routes to any given spot in a fire area has been lost. As regards the inspection of hydrants medium, there seems a tendency for the modern Services to allocate this job to the "labour side" of the Department, to the exclusion of the drivers and pump operators.

By the process of interchange of duties of drivers between fire apparatus and ambulances, the essential medium of constant travelling and driving, arising from ambulance work, provides for considerably greater efficiency for personnel when they are driving fire apparatus, whilst still providing for the "lower deck" bracket to acquire similar knowledge whilst they are acting as Attendants in the ambulances.

There is only one stipulation that I, in my experience, consider must be put on a Fire Department operating also as an Ambulance Division, however large or small it may be, and that is the appointment of an Ambulance Officer, to avoid the Fire Fighting Officers being burdened with additional administration concerning ambulance work, when these Officers are already fully occupied with matters more urgent and needing their attention, in terms of training, fire prevention inspections and station management.

Finally, whilst it is useful and satisfying to observe that the operating of an Ambulance Service by the Fire Department improves public relations, I would, as a fireman, be ashamed to think that this aspect is the primary motive; and I would not like to see the day when public relations to the Fire Department are primarily subject to the work of its Ambulance Division, rather than its primary functions in life—fire extinguishing, prevention inspection, and liaison.

Yours sincerely,
R. G. Cox
Chief Fire Officer
Fire Services Department,
Port of Spain,
Trinidad, B.W.I.

April Showers Bring Posies

To the Editor:

This morning's mail brought the April issue of FIRE ENGINEERING. I stopped everything else, while taking time out to look it over. You are to be congratulated on running the story of volunteer firemen. In this age of nuclear warfare, there will be a burden on fire departments coming from heretofore remote areas . . . as pointed out in your editorial, it is high time the fire service took stock of itself.

Sincerely,
Robert C. Byrus, Director
Fire Service Extension
University of Maryland
College Park, Md.

They Dispute the Disputer on Radiant Heated Fire Stations

To the Editor:

In your December issue of FIRE ENGINEERING, I read the article where there is some dispute over who had the first fire station with radiant heat.

I would like to put in my two cents' worth and state that our fire station in Pacific Grove, Cal., was completed in August 1948, and that we have radiant heat. It is of the circulating water type. I enclose picture of the station.

Victor May
Chief, Pacific Grove, Cal., Fire Department

To the Editor:

In the December, 1955, issue of FIRE ENGINEERING, Page 1192, you have a picture and story of the first fire station to have radiant heat which, according to Chief J. Coleman Miller of Auburn, Maine, was erected in 1952.

The Allen F. Payson Station in Camden, Maine, had radiant heat installed in October of 1949. This building is 120 feet long and 50 feet wide and has over 5,000 feet of pipe for radiant heat under the floor, and is the best heat anyone could ever want.

It has been very satisfactory, particularly when the trucks come in after a very snowy run because in a very short time the undercarriage is all dry from the floor heat.

Allen F. Payson
Chief, Camden, Me., Fire Department

Just to show how fire service "firsts" have got to be checked and double checked. Actually, Chief Miller of Auburn was disputing the claim of a Pacific Coast chief (not Chief May), who avowed his new fire station was the first to install radiant heating. But then, somebody suggests, what do Californians know, or need to know, about heating stations?—EDITOR

New York State Air Raid Warning Signals Changed

Effective May 10, 1956, the air raid warning signals throughout New York State have been changed to comply with those recommended by the Federal Civil Defense Administration. The action was taken by the State Civil Defense Commission in order to standardize on signals now used by the majority of the states.

The new signals are:

Alert Signal: A steady blast of three to five minutes duration. Sounded by all public warning devices, it is intended to inform the people that Civil Defense emergency instructions are about to be issued. AM radios should be tuned to a Conelrad frequency for bulletins. Telephones should not be used for this period.

Take Cover Signal: A three-minute warbling or fluctuating tone of varying pitch. Also sounded by all public warning devices, it will mean that an enemy attack is imminent. All persons must immediately take cover in the best available shelter.

The warning will have no established sequence and either may be sounded to the exclusion of the other. The signal previously designated for "All Clear" has been abandoned and this information will now be given by Conelrad, wardens, police and other Civil Defense workers on a person to person basis. This has been done to guard against people in areas contaminated by radioactive fallout, leaving their shelter before the hazard has been neutralized.

Hammurabi Had a Code For It!

It may come as a surprise to learn that there were fire codes long before Christ.

If you doubt it, look up the Babylonian Code of Hammurabi. Hammurabi was King of Babylonia, 1955-1913 B. C.

Here's what Hammurabi's Code had to say about pilfering at fires:

"If fire breaks out in a house, and a person going into that house to put out the fire shall cast his eye on the property of the owner of the house, and shall take the property of the master of the house, they shall throw him into that selfsame fire."

WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

New Transistorized Dynamic Mike and Speaker-Mike

Motorola has announced the first transistorized dynamic microphone for mobile radio applications. The microphone features a rugged specially designed dynamic element employed in conjunction with a built-in transistor preamplifier.

The transistor preamplifier, an integral part of the microphone, eliminates the need for a preamplification at the transmitter. This technique overcomes the noise pickup problem inherent in mobile installations.

Currently offered as a replacement item or an optional accessory with Motorola equipment, the palm-size device is directly interchangeable with Motorola carbon microphones now in use.

The new development is also available as a dual purpose dynamic "speaker-mike" which functions both as a full-output communications-type loudspeaker as well as a dynamic microphone. It can be conveniently mounted or held near the operator's ear to overcome high ambient noise.

The dynamic speaker-microphone is the same size as the dynamic microphone and is also optional with Motorola equipment. A minor modification adapts earlier Motorola equipment to use the unit. Additional information is available from Motorola Communications and Electronics, Inc., 4501 W. Augusta Blvd., Chicago 51, Ill.

Transistorized Paging Horn

A two-way portable radio with powerful "transistorized" paging horn has been introduced by Industrial Radio Corp., 428 North Parkside Avenue, Chicago 44, Ill.

The amplifying system gets the message through to groups or individuals on the fire or training grounds, through noise where normal radio reception would be difficult or impossible.

Two-way paging offers advantages in efficient, flexible communications as all instructions can be immediately acknowledged. As no outside power is needed, the unit may be used anywhere and calls heard above ordinary interference.

Heart of the Radio Pager is a transistor amplifier which, with efficient re-entry horn, compares in performance, it is said, with a 20-watt public address unit or loud hailer. The unit may be adapted to that use when necessary.

For complete information (Model D, designed for fire police use), address the above company direct.

Sireno Announces New Siren

To better meet the demands of the fire and police services for louder warning devices to overcome and prevent the increasing problems of traffic congestion, Sireno has introduced its No. ED-12 vehicle siren.

The new device is said to be the first to have a decibel rating equal to that of a one-horsepower air raid siren.

Developed primarily for fire apparatus and ambulances, the ED-12 can also be mounted on the fender or roof of fire cars, police cruisers, or similar vehicles.

For complete information, address The Sireno Co., Inc., 214 William Street, New York 38, N. Y.

Flammable Gas Detector

Mine Safety Appliances Company, Pittsburgh, recently introduced a new line of portable instruments designed to detect and measure flammable gases and vapors. Four models, each intended for specific functions, are included in this new line of combustible gas indicators.

One of the principal features of the new instrument is its compactness. It weighs only six pounds, in contrast with the 12-pound weight of earlier models. Power to operate the instrument is supplied by eight dry-cell flashlight batteries.

Samples of atmosphere to be analyzed are drawn into the instrument by squeezing an aspirator bulb. The atmosphere is tested for combustibility by a balanced Wheatstone Bridge circuit, supplied with current by the batteries. Only a few seconds are required to make a test.

Specially designed flame arrestors on both sides of the sample flow system permit use of the instrument in testing for all flammable gases and vapors, including hydrogen and acetylene in air.

Model 20 Combustible Gas Indicator is designed for multiple calibrations. A selector switch on the instrument panel has five different settings for different gases or vapors. No calibration curves are necessary to interpret results of tests.

Model 21 is identical to Model 20 except that it has a dual scale, controlled by a selector switch. One scale provides readings from 0 to 100 per cent of the lower explosive limit. The other provides readings in the range from 0 to 25 per cent of the lower explosive limit.

Developed primarily to test manholes, sewers and other underground areas, Model 30 Indicator can differentiate between natural gas and petroleum vapors.

The new line of M-S-A Combustible Gas Indicators is described in Bulletin No. 0804-2 just published by the company. Copies may be obtained without obligation by writing Mine Safety Appliances Company, 201 N. Braddock Avenue, Pittsburgh 8, Pa.

Manual on "Dacron" Hose

E. I. Du Pont de Nemours & Co. has issued a booklet *Properties of Industrial Fire Hose Jacketed with 100% "Dacron,"* describing the physical and chemical properties of "Dacron" polyster fibre in industrial fire hose.

The bulletin gives data only on industrial hose jacketed with 100% "Dacron." However, "Dacron" is used in municipal fire hose. The jacket on municipal hose usually consists of a cotton wrap with filler cords of "Dacron." Although municipal fire hose will not have the same properties as one with a jacket of 100% "Dacron," many of the properties discussed in this bulletin do apply to filler cords. Address Technical Service Section, Textile Fibres Department, E. I. Du Pont de Nemours & Co., Wilmington, Dela., for a copy of Technical Information Bulletin D-77 dated April, 1956.

F.A.M. Code of Ethics

The Fire Apparatus Manufacturers Association, Inc., has published its "Code of Ethics" for the industry. The objective is "To Improve product quality, business conduct of members" and the self imposition of rules for the "mutual benefit of themselves and the general public."

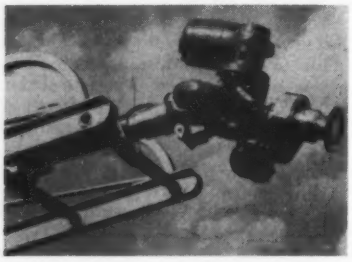
Regulations as listed outline fair and unfair practices within the industry for the guidance of its members. A stand-

ard guarantee-warranty is recommended, and invoicing procedures are outlined to carry out the purpose of the code.

An Arbitration Committee has been organized to hear complaints and render decisions on those found in violation of the membership pledge.

The Association maintains its headquarters at 815 Fifteenth Street, N. W., Washington 5, D. C. Copies of the Code may be obtained by writing to Secretary-Treasurer Edward L. Koepenick.

Push Button Fire Fighting



Another step forward in the armament for the nation's fire fighters is the remote powered control ladder pipe manufactured by the Akron Brass Mfg. Company, Inc., of Wooster, Ohio. Introduced at the I.A.F.C. Conference in Omaha, the device was later demonstrated at the F.D.I.C. in Memphis.

The Akron Remote Control Ladder Pipe, as it is catalogued, is a motor-operated pipe that permits vertical control, the raising or lowering of the pipe, and control of the nozzle from wide open to shut-off, all by push button on the control panel of the turntable of the aerial.

The purpose of the appliance is to eliminate the necessity for having a man on the fly of the ladder. With this unit, one man has complete control of the aerial ladder, the ladder pipe and fog nozzle. It relieves the usual ladder pipe operator for other duty and lessens the danger of the man being overcome or injured by smoke, flame, falling walls or debris.

Duo-Safety Adds to Fire Ladder Line

A new model aluminum fire ladder has been announced by Duo-Safety Corp.

Designated as the 1000-A Series, the new ladder, designed for pumper use, is a companion line to the 900-A Series, and serves as a substitute for the 7000-A Series. It is available in extensions of two and three sections, in lengths up to 30 feet and in roof and wall ladders.

Feature of the new line is a unique tongue and groove arrangement which holds the ladder sections together, without the use of hooks or brackets, eliminating obstructions of any kind. This provides an unusually rigid ladder, the manufacturer claims, and minimizes the banking space required.

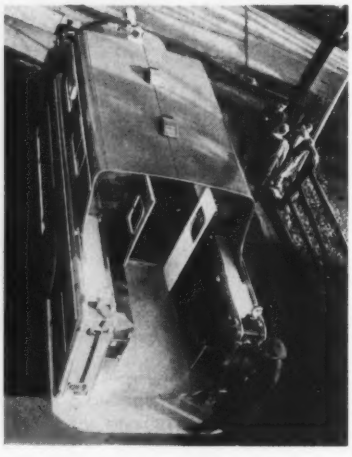
Complete information may be obtained by writing directly to Duo-Safety Ladder Corp., 811 Ninth Street, Oshkosh, Wis.

New Nielsen-Rionda Catalog

Nielsen-Rionda, Inc., 40 John Street, New York 38, N. Y., has issued a new 32-page catalog illustrating their complete line of badges and uniform accessories for police and fire departments, which is available upon request.

These badges, according to the manufacturer, feature a solid flat back which adds durability and which permits the use of a special money clip attachment made of nickel silver, chrome plated. All lettering is planished for smooth, even appearance, while finely engraved dies assure sharper and clear detail to the face of the badge. Another feature is the use of a new metal, Sta-Brite, for the badge body, which can be polished like solid gold and which maintains its finish throughout the life of the badge.

Combination Ambulance-Squad Wagon



The Christopher Company of New York City recently delivered the first of a new line of emergency wagons. Dubbed the "Cruis-Aider" because of the yacht-like design, it combines the features of a fully equipped ambulance and the utility of a squad wagon in a compact unit.

The apparatus is built on a cab-over-engine chassis with a gvw rating of 19,000 pounds. Engines supplied with the chassis are rated to meet the requirements of the community with 140 hp as the minimum.

Body and cab are streamlined into one integral unit with ample flexibility provided to prevent undue strain. The forward section is a completely enclosed ambulance unit with hot water heater and powered ventilators. The rear section is connected by swing doors and has bench seats. Complete use is made of all space for equipment storage. A warning signal on the dash board notifies the driver when a compartment door is open.

Dual batteries and heavy duty alternator-rectifier combination supply the electrical requirements. A transformer wired to receptacles located in strategic positions allow plugging in floodlights or other electrical equipment.

Full details can be obtained by writing to the Christopher Company, 66-70 Beaver St., New York 4, N. Y.

New Type Safety Block

A new safety tool for blocking fire cars and apparatus wheels has been introduced by Calumet Steel Castings Corp. of Hammond, Ind.

Made of alloy steel casting, it is strong but compact, measuring 7 x 9 x 11 inches; light in weight (12 pounds); handy to use and stow, and it holds fast on any surface with ample factor of safety for heaviest vehicle.

New Packaged Fire Alarm System

A new, low-priced fire alarm system designed to provide protection and reduce service troubles for installers has been announced by Fire-Lite Alarms, Inc., of New Haven, Conn.

The manufacturer claims the packaged fire alarm system includes everything to protect a 5 to 7-room house with rooms up to 20,000 square feet (Underwriters' Laboratories spacings).

The system includes heavy duty control panel with battery testing meter and

Continued on page 533

"EUREKA Multiple-Woven Hose gives us an average service life of over 15 years!"

"Over a period of more than 30 years, we have used Eureka's *Paragon* Multiple-Woven hose," states the Chief* of an Eastern municipality's fire department. "Our records show that it gives us an *average* useful service life of over 15 years. Some sections have remained in serviceable condition for 20 years or more.

"This is about 3 or 4 times the useful service we might expect from the lowest-priced approved hose. So Eureka actually gives us nearly twice as much service for every dollar.

"Besides, we know that Eureka *Paragon* hose won't let us down when the pressure is on! I've watched it being made in your plant on the unique loom that weaves all plies at one time and interweaves them into a single jacket of amazing strength and wearing ability. That's why I've never hesitated to push hose pressure to the limit when it was needed."

Let your Eureka representative show you all the reasons why Eureka Multiple-Woven is your best hose buy. Of course, if conditions beyond your control force you to get the most footage for your present hose allotment, he can also show you Eureka's lower-priced approved hose. Write or wire to have him call. Remember, he is a specialist in fire hose!

*Name on request

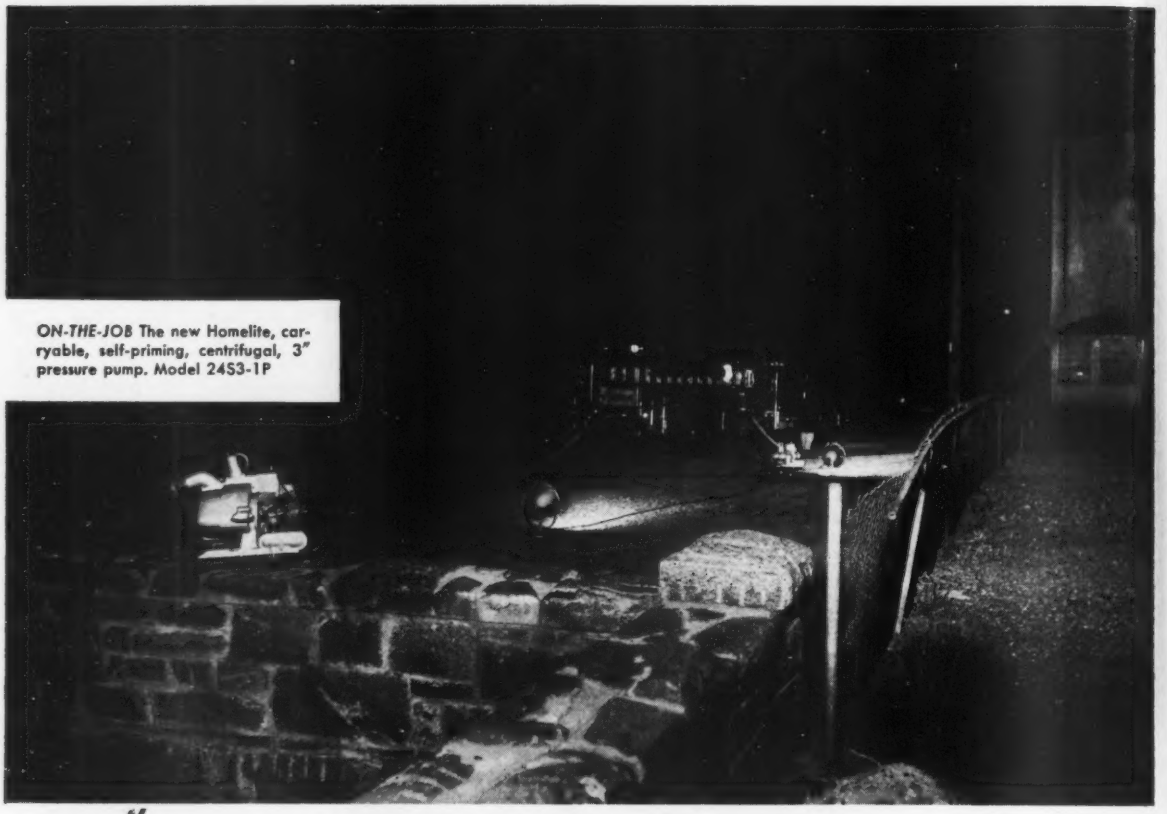
Note how criss-crossing vertical cords tie all plies into one solid body.

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

1 Market Street Passaic, New Jersey *Division of* **United States Rubber**



ON-THE-JOB The new Homelite, carryable, self-priming, centrifugal, 3" pressure pump. Model 24S3-1P

New HOMELITE High-Volume Pressure Pump

Carryable • Non-Clogging
Specially Designed for Fire Fighting

SPECIFICATIONS

Pressure P.S.I.	Gallons per Minute
75	40
70	55
60	85
40	145
Open Discharge	205

5 ft. lift

Automatic Priming: 5 feet in 15 seconds; 15 feet in 25 seconds
Total Lift: Guaranteed for 28 feet
Total Head: 185 feet
Weight: 107 pounds
Size: 3" Suction and Discharge

Give your fire department the edge in fire-fighting effectiveness with this new, Homelite high-volume, centrifugal pressure pump.

Use it for direct fire fighting, filling booster tanks, and feeding pumpers from wells and streams . . . or for any other job that requires dependable, high-volume, pumping performance. The Homelite Model 24S3-1P weighs only 107 pounds . . . carries easily over rough ground to where you need it most. Lightning fast, automatic priming gives you pressure in seconds . . . with a guaranteed suction lift up to 28 feet.

Powerful Homelite 2-cycle Engine starts in a flash . . . in the coldest, hottest or wettest weather. It will operate at top efficiency for long, dependable service life with minimum maintenance.

Ask for a free demonstration. Your nearby Homelite representative will be happy to show you the 24S3-1P in action. Call him today.

Manufacturers of
Homelite Carryable Chain Saws and Pumps, Generators, Blowers

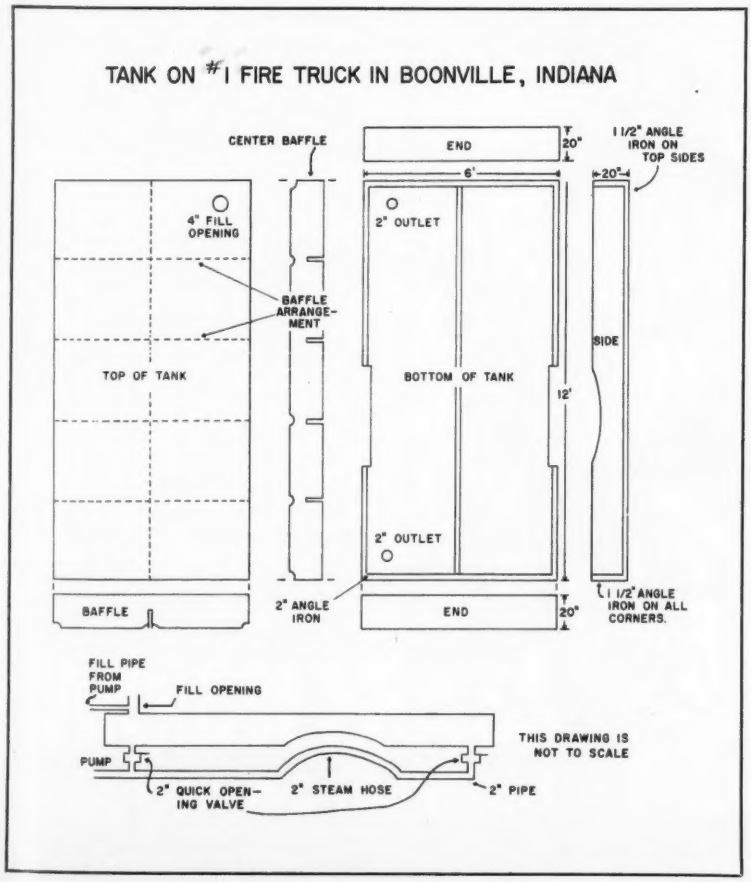
PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE

A DIVISION OF TEXTRON, INC.
306 RIVERDALE AVE., PORT CHESTER, NEW YORK
Canadian Distributors: Terry Machinery Company, Ltd.
Toronto, Montreal, Vancouver, Ottawa, Edmonton, Moncton

short cuts and gadgets

The Boonville Department widened the chassis supports 12 inches on each side to facilitate mounting. The tank rests on a cushion of 1" x 4" tarred oak boards. Fender wells were built-in for neat appearance



Boonville Brothers "Roll Their Own"

Inasmuch as the theme for this issue of FIRE ENGINEERING is the "tanker," it is fitting that we should devote the current "Short Cuts and Gadgets" to this subject.

Our contributors are Fire Chief Raphael Yoakum and the Boonville, Ind., Fire Department. Our story is about the 1,000-gallon tanker constructed by members of that department with an assist from friends and the mutual aid arrangement between Boonville and local tank truck operators.

To begin with, the department is undermanned. There are three full-time paid men in the organization and no organized volunteers, which means, according to the Chief, that about 50 per cent of the time, only one man responds with the apparatus. Therefore no time can be lost hunting around for water. So as much water as can be toted is carried on the apparatus.

The department has two fire trucks, one carrying approximately 800 gallons and the other, the home-built product, 1,000 gallons of water. *We fight our fires with two 1½-inch fog nozzles,* comments Chief Yoakum. *If we can't whip a fire with the water on our apparatus, we can knock it down and keep it under control while we're hooking up to the plug. . . . Most of the time we have enough water to last until one of the conversion water trucks that is in or around our city can get to us.*

Chief Yoakum and the members of this small department constructed the tank from 11-gage steel reinforced with angle iron. It was designed to fit one of their existing pumpers. Five local welders contributed their time and service in assisting the firemen.

The 1,000-gallon unit features front and rear suction connections. By means of quick-opening two-inch valves the pump operator can select the proper one to insure obtaining the full amount of water in the tank. This overcomes the shortcoming of some tanks where the truck is located on a grade. Full capacity is available whether the apparatus is facing up or down hill.

Use of this tank saves valuable time in getting water on the fire. Upon arrival the pump operator can begin operations with a 1½-inch fog line. If necessary, later arriving men can hook up to a hydrant where such exists, and stretch a second 1½-inch line. This is the maximum the department can handle.

The department averages 30 runs a year out of town. In order to guarantee sufficient water supply for the rural alarms, an arrangement has been worked out with local tank truck operators for assistance. Eight private firms within a radius of five miles of Boonville can be reached by phone and on request will respond with a supply of water. These tanks range in capacity from 1,000 gallons to 1,600 gallons. According to Chief Yoakum, they usually arrive before his own force has run out of water.

FALSE ALARMS

Romance

To the Editor:

We Australians are chuckling about Mrs. Sidney Tycoon, who suffered a strange mishap which—although causing considerable inconvenience at the moment—eventually ended happily.

Mrs. Tycoon lost her spectacles. Although members of her family searched high and low, these reading aids could not be found.

Accidentally a Kid Sister of the bereaved observed that the family toilet wouldn't empty itself. Poppa summoned a plumber who tackled the job and, in the process, recovered Madam Calpurnia's spectacles. Whereupon he rendered his account.

"Dear Mr. Glutz: Well, I did your job and did I laugh when I found the glasses. They are the second pair that I got out of a similar place. Also, that is how I met my wife. You see, we both went to the same country school where the toilets are on the back of the school grounds—boys on one side and girls on the other—an old-fashioned two-holer back to back. Well, I stuck my head down one hole on the boys' side, and there I met her face to face, and dropped my glasses. Can you imagine how embarrassed I felt? Now don't think I am trying to say that your wife stuck her head in the toilet, as they are somewhat different nowadays. I can't conceive that your wife wouldn't know what end she had her glasses on. Please send me two quid, and we will call it square. I won't tell anybody.

TY. L. PIPE
Plumber

Not According to Catalog

Conceiving his duty to include Americanization, as well as Christian indoctrination, a missionary passed around a Sears Roebuck catalog among the South Sea islanders.

Somewhat to the astonishment of the missionary, a tall young Samoan ordered Item No. 34FET89 (a bouffant, low-peek evening gown for ladies) from a picture in that catalog.

Weeks later his package arrived, and the missionary so informed him. The Samoan dressed in his best lava-lava, anointed himself with flagrantly fragrant oils, and arrived to claim his prize.

Upon examining the dress he refused to pay.

"Where is the girl who was in it?" he indignated.

You're getting old when the gleam in your eye is from the sun hitting your bifocals.

Policeman: "No license, miss? Do you know, young lady, you can't drive without one?"

Miss Bliss: "That explains everything now. I thought it was because I was nervous and near-sighted that I bumped two cars and ran into this hydrant."

Drought

Tennessee Mountaineer: "I shore wish I had my wife back."

Transient: "Where is she?"

Tennessee Mountaineer: "I swapped her off for a jug of corn juice."

Transient: "Beginning to miss her, huh?"

Mountaineer: "Nope. I'm jist thirsty agin."

Said one lady hog to another:

"Heard from the Old Boar lately?"

"No. But I had a litter from him last week."

The woodpecker is the only creature that gets anywhere by knocking—and in the end he winds up in a hole.

You probably have heard about the little Scotch boy who shot both of his parents so he could go to the orphans' picnic.

Framed

Coed: The psychologist told me, "Success depends largely on one's frame of mind."

Her Dad: Maybe, but out in Hollywood it mostly depends just on one's frame.

"Gimme a dime for a cuppa coffee, and hurry it up, pal."

"What's all the rush?"

"I'm double parked."

A husband is actually what's left of a sweetheart after the nerve's been killed.

"I've been climbing fences for 30 years and it'll be another 30 before I need help from inexperienced young pups like you . . . Now git!"

YOU EXPECT THE BEST FROM AKRON BRASS

– here it is . . .

Entirely New

PDQ FOG NOZZLE

★ Resilient rubber bumper for protection against damage

★ Corrugated no-slip grip

★ Adjustable through all angles of fog

★ High gallonage

★ Positive stream positioning— by feel or sight. Clicks into fog patterns or straight stream

★ Easy pattern indicators

★ Swivelling "Rocker Lug" base—handle is always on top

★ Akron quality ball shut-off

★ You too will agree—finest nozzle of its type

★ Man-size handle

PERFORMANCE DATA at 100 P.S.I. Nozzle Pressure

STYLE	SIZE	NARROW FOG GPM
1209	¾" - 1"	24
1218	1½"	95
1219	1½"	125
1229	2½" for PP	250
1239	2½" Dir. Con.	250
1249	2½" with PP	250

AKRON BRASS
FIRE FIGHTING EQUIPMENT

Akron Brass Mfg. Company, Inc. • Wooster, Ohio

What's Burning?

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada from April 22nd to May 22nd.

Mobile, Ala.—Stanley Paper Salvage Co. warehouse destroyed.

Siluria, Ala.—Felt manufacturing plant owned by T. J. Phillips, destroyed.

Prescott, Ariz.—J. R. Williams Super Market destroyed.

Little Rock, Ark.—Lawson School, 11 miles southwest, destroyed.

Boulder Creek, Cal.—Somni's restaurant and motel, Funland Arcade and bowling alley and Locatelli's meat market and grocery, destroyed.

Los Angeles, Cal.—General Plastics Corp. plant destroyed.

Pomona, Cal.—High school destroyed.

Sacramento, Cal.—Midtown Building damaged.

San Francisco, Cal.—Dwelling of William G. Irwin destroyed.

Norwich, Conn.—Sacred Heart Church destroyed.

Clayton, Dela.—Main industrial building and water tank at St. Joseph's Industrial School, destroyed.

Galena, Dela.—Storage building of Kent Oil Co. destroyed and five nearby dwellings, shop, restaurant and school damaged. Explosions.

Wilmington, Dela.—Jet plane of U. S. Air Force, F-94C Starfire, at New Castle County Airport destroyed.

Washington, D. C.—Warehouse of W. & J. Sloane damaged.

Fort Walton Beach, Fla.—Elgin Air Force Base officers' beach club, three miles east, destroyed.

Miami, Fla.—Dade County Farmers Market produce shed destroyed.

Indian Springs, Ga.—Foy Hotel and adjacent buildings destroyed.

Swainsboro, Ga.—Scott's Service Station & Garage, Johnny Howard Service Station and T. F. Sanders Garage and Motor Parts Co. destroyed.

Boise, Ida.—Community Theatre building destroyed.

Bonners Ferry, Ida.—Bonners Ferry Bakery and adjoining shops destroyed.

Idaho Falls, Ida.—Porter Rest Home destroyed.

Payette, Ida.—Farber's Department Store destroyed. Explosion.

Peace River, Ida.—Idaho Steel and Plastic Co. destroyed.

East St. Louis, Ill.—St. Phillip's Roman Catholic Church destroyed; nearby convent damaged.

Waukegan, Ill.—Radio Station WKRS damaged.

Bicknell, Ind.—Tipple at Sunshine Coal Mine, half mile west on Route 67, damaged.

Gary, Ind.—Gateway Apartments in downtown district damaged.

Grabill, Ind.—Crosby Aero Marine Co., division of Midwestern Industries Corp., fiber glass boat manufacturers, destroyed.

Indianapolis, Ind.—Roosevelt Inn destroyed and nearby Gaines Market, C. & C. TV Shop and Jeffries Barber Shop damaged.

Sullivan, Ind.—Davis Hotel, Fisher's Jewelry Store, News Nook and barber shop destroyed; Vogue Beauty Salon, Sullivan County Beverage Sales and McCrocklin & Sons, insurance office, damaged. Defective electric sign.

Tell City, Ind.—Tell City Feed & Grain Elevator damaged. Defective wiring.

Terre Haute, Ind.—Lumber & Plumbing Supply Co. destroyed.

Cresco, Ia.—Building housing United Shippers Cooperative office destroyed; adjoining Rathert & Sons coal yards damaged.

Webster City, Ia.—Webster City Country Club destroyed. Lightning.

Hazard, Ky.—Bible's Market, grocery store, destroyed.

Pineville, Ky.—Furniture factory on campus of Clear Creek Baptist Bible School destroyed.

New Orleans, La.—Eight buildings, Dryades and Howard streets, being demolished, destroyed.

New Orleans, La.—McDonough No. 39 Elementary School damaged. Arson.

Baltimore, Md.—Security Laundry Co. damaged.

Baltimore, Md.— A TWA Constellation at Friendship International Airport damaged. Oxygen bottle exploded.

Berlin, Md.—Plant, office and feed mill of Berlin Milling Co. destroyed.

Essex, Md.—Acme Supermarket and Highway Bowling Alley destroyed. Explosion.

Salisbury, Md.—Warehouse of Peninsula-Goslee Inc. destroyed.

Beverly, Mass.—First Federated Church, "The Church in the Cove," destroyed.

Boston, Mass.—City Highway Department shed at City Yard, damaged.

Provincetown, Mass.—Mansion and art gallery of Dr. Carl Murchison destroyed.

Adrian, Mich.—Lenawee Country Club damaged. Arson.

Detroit, Mich.—Building housing Fred Saunders Co. confectionery firm and Eaton Ready to Wear Dress Shop storage facilities destroyed.

Detroit, Mich.—War surplus goods warehouse of R. Allender & Co. damaged.

Kalamazoo, Mich.—Farm home of Claire I. Brown, Ostemo Township, destroyed.

Springville, Mich.—Processing plant of Hubbard Apiaries, Highway M-50, destroyed.

Waterford, Mich.—Combination grocery, service station, garage and apartment, Clintonville and Mann roads, destroyed.

Biloxi, Miss.—Louisville & Nashville Railroad bridge across Bay of Biloxi, damaged.

Caruthersville, Mo.—Vandivort Lumber Co. and seven dwellings destroyed.

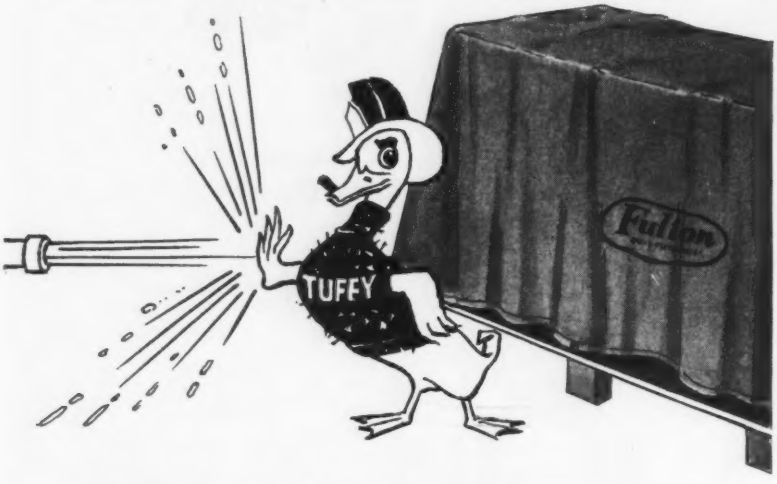
Cooter, Mo.—Super market and cafe destroyed.

Kansas City, Mo.—Building housing Peerless Serum Co. and offices of Kline's Department Store damaged.

Great Falls, Mont.—Malstrom Air Force radio housing destroyed. Short circuit.

Thompson Falls, Mont.—Watters Bros. Sawmill destroyed. Sparks in sawdust burner.

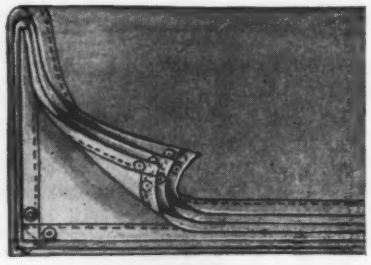
Dover, N. J.—Production and storage building,



Shuredry Duck Salvage Covers Cut Costly Fire Losses from Smoke and Water

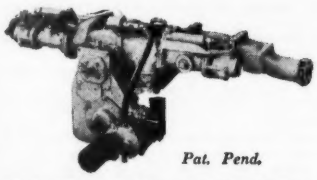
Damage from water and smoke is reduced when SHUREDRY Green-Bak Salvage Covers are on the job. Only the *finest quality, treated cotton duck,* which is pressure impregnated by the exclusive Fulton dry treatment, is used in SHUREDRY Covers. All seams are waterproofed, and SHUREDRY Covers are light—pliable and easy-to-handle. For top dependability — specify SHUREDRY when ordering salvage covers from your Fire Equipment Dealers.

Shuredry Green-Bak® Covers will pass the tests specified by the National Board of Fire Underwriters. They also carry the approved symbol of the Associated Factory Mutual Fire Insurance Companies.



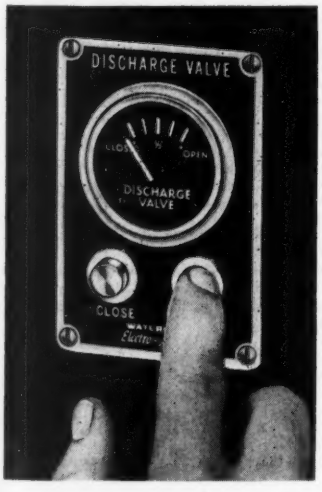
Another Famous Product from Fulton BAG & COTTON MILLS

ATLANTA • CHICAGO • DALLAS • DENVER • KANSAS CITY
LOS ANGELES • MINNEAPOLIS • NEW ORLEANS • NEW YORK
OKLAHOMA CITY • PHOENIX • ST. LOUIS • SAN FRANCISCO • SAVANNAH • WINTER HAVEN



Pat. Pend.

Electro-Matic 2-stage, centrifugal, fire pump, 500 GPM, Class A. 500, 750 and 1000 GPM capacities available in 2 and 3-stage models.



New Waterous Electro-Matic* pump gives you faster action because it's fully automatic!

Waterous, the first fire pump with power controls for all major pumping operations. The Electro-Matic saves you many of those first critical moments because it is fast, simple and easy to operate. Electro-Matic shift control engages with the flip of a switch located in the cab. A simple push-button controls each discharge valve—opens and closes them either fully or partially, a dial shows the exact valve setting. Changes between "volume" and "pressure" are fast and safe. The Electro-Matic transfer valve operates smoothly, independent of motor speed or pump pressure—panel-mounted buttons control it. The Electro-Matic gives you faster, safer pumping in every way—the utmost in modern fire fighting.

New design of the Electro-Matic requires less space, weighs less and offers extreme mounting flexibility. Newly engineered waterways and impellers give greater performance and efficiency under the widest possible range of conditions. Famous Waterous *2-piece*, horizontally-split case and oil-lubricated impeller shaft bearings located outside of water chamber have been retained for greater dependability and ease of maintenance. Developed after years of careful research and testing, it's the greatest fire fighting development in years—Electro-Matic by Waterous.

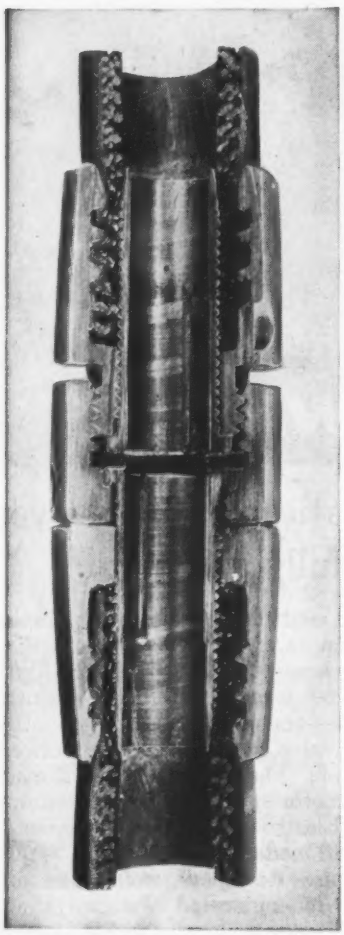
FREE BOOKLET will give you complete details on Electro-Matic controls, design, maintenance ease and adaptability to all modern equipment. Obtain by writing to:

WATEROUS *Electro-Matic*

Dept. 301, 42 Fillmore Avenue, St. Paul, Minnesota

*Registration applied for.

Army's Picatinny Arsenal damaged. Explosions.
Eatontown, N. J.—S. K. Smith Textile factory damaged.
Elizabeth, N. J.—Building housing Gateway to Fashion damaged.
Franklyn, N. J.—Barn on Russell Katzenstein farm, Route 23, destroyed.
Jersey City, N. J.—G. I. Grocers warehouse damaged.
Kearney, N. J.—Building housing O'Hara's Restaurant damaged.
Lakeland, N. J.—Administration building of Camden County Mental Hospital damaged.
Millburn, N. J.—A. & P. super market damaged.
Millburn, N. J.—Millburn Presbyterian Church damaged.
Paulsboro, N. J.—J. Howard Coombs Lumber Co. yard destroyed.
Chestertown, N. Y.—Friends Lake Manor, resort hotel, destroyed. Overturned oil heater.
Fallsburg, N. Y.—Two buildings of Hotel Nemerson, resort hotel, destroyed.
Long Beach, N. Y.—Adelon Hotel destroyed.
Oswego, N. Y.—Building 173 W. First street, housing luggage shop and restaurant, damaged.
Parksville, N. Y.—Main building of Ideal Hotel, summer resort, destroyed.
Saratoga Springs, N. Y.—Stewart Ice Cream Co. plant, Route 9-K, damaged.
Syracuse, N. Y.—First Trust & Deposit Co. damaged.
Beaufort, N. C.—Building housing Imperial Barber Shop and Colonial Store damaged.
Chimney Rock, N. C.—Mountain View Inn destroyed.
Greensboro, N. C.—Greensboro Ford Motor Co. damaged. Gasoline explosion.
Hamilton, N. C.—Hamilton Theatre, adjoining store and buildings, damaged.
Hamilton Lakes, N. C.—Starmount Forest Country Club destroyed.
Hickory, N. C.—Building housing Hickory Foam Rubber Co. destroyed.
Lexington, N. C.—Grain Dehydrating plant owned by George S. Coble, destroyed.
Newton, N. C.—Balls Creek Campground owned by Methodist Conference and 150 buildings destroyed.
Cincinnati, Ohio—Tri-State Foundry Co. damaged.
Cincinnati, Ohio—Ohio National Guard Armory destroyed.
Cleveland, Ohio—Warehouse of Mantel Furniture Co. damaged.
Cleveland, Ohio—Federal Department Store damaged.
Cleveland, Ohio—Perry-Payne Building, downtown, damaged.
Dayton, Ohio—Thal's women's wear store and Baker's shoe store damaged.
Hamilton, Ohio—Hamilton Eagles Lodge Temple damaged. Arson.
Van Wert, Ohio—Steak House and Bar 30, Stover Grocery and Yours and Mine Restaurant damaged.
Tulsa, Okla.—Jitney Jungle Supermarket in East Tulsa, destroyed.
Boardman, Ore.—Six units of Fred Smith's Motel destroyed.
Drain, Ore.—Totem Inn destroyed.
Eugene, Ore.—Cuddeback Lumber Co. damaged. Burner sparks.
Hermiston, Ore.—Hermiston Variety Store, Hale's Tavern and Lee's Clothing Store damaged.
Klamath Falls, Ore.—Klamath Valley Lumber Co. and McCall's Auto Wrecking Co. destroyed.
Portland, Ore.—Northwest Packing Co.'s No. 1 plant destroyed.
Springfield, Ore.—Northwest Stake Co. damaged.
Bethel, Pa.—Miller Bros. garage and auto agency destroyed.
Bowmanville, Pa.—Greyhound bus on Pennsylvania Turnpike destroyed. Explosion in motor.
Bridgeport, Pa.—I. F. March's Sons Lumber Yard and store and office building of Lloyd H. Daub Hardware Co. destroyed.
Grantham, Pa.—Aircraft Engine & Parts Corp. factory destroyed.
Lemoyne, Pa.—Warehouse and office building of Ott Distributors, Inc., destroyed. Lightning.
Philadelphia, Pa.—J. B. Smith Metal Products Co. plant damaged.
Pine Grove, Pa.—Six buildings of Garden State Tanning Co. destroyed.
Warren, Pa.—Carver Hotel in downtown business district destroyed; adjoining Big Warren Moose Lodge and jewelry store damaged.
West Chester, Pa.—Lasko Metal Products Inc. destroyed.
West Chester, Pa.—Unused ice and ice cream plant destroyed. Blow torch.
Bristol, Tenn.—Two shoe stores, loan office, dress shop and barber.
Jacksonville, Tenn.—Club 45 an Highway 45 destroyed.
Wilmer, Tex.—Excell Roofing Co. destroyed. Oveheated asphalt on dry felt paper.
Salt Lake City, Utah—Lucin cutoff railroad bridge across Great Salt Lake damaged.
Newport, Vt.—First Congregational Church and nearby school damaged.
Pulaski, Va.—Building housing restaurant, two shops, Salvation Army transient home and apartments, destroyed. Match to gas heater caused explosion.
Staunton, Va.—Augusta Motor Sales body and paint shop destroyed. Spilled gasoline on pilot light.
Staunton, Va.—J. P. Belcher & Son lumber mill destroyed.
Aberdeen, Wash.—Aberdeen Construction Co. destroyed.
Burlington, Wash.—Kuntson Brothers Department Store destroyed. Faulty oil stove.
Centralia, Wash.—Borst Ball Park destroyed. Cigarette.
Seaview, Wash.—Associated Oil Distribution Station destroyed. Explosion.
Winlock, Wash.—Baptist Church destroyed; dwellings damaged.
Yakima, Wash.—Big Pyramid Orchard warehouse destroyed.
Spencer, W. Va.—Spencer Drug Store and DeGruyter jewelry store destroyed; two stores damaged.
Vancouver, B. C.—Vancouver Rolling Mills Ltd. destroyed.
Vancouver, B. C.—Belin Paper Box Co. and Grill Sheet Metal, Ltd., destroyed.
Ajax, Ont.—E. F. Drew & Co. Ltd., chemical



UNRETOUCHED PHOTO

4 REASONS WHY YOU SHOULD SPECIFY BAR-WAY STREAMLINED HIGH PRESSURE HOSE COUPLINGS...

1. **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.
2. **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
3. **FLEXIBILITY** — Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
4. **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

NOW AVAILABLE 1¼" hexagon or depressed eye couplings designed for U. S. A. F. crash truck requirements. You may now specify these couplings —carried in factory stock. Send for free pamphlet which gives detailed specifications for all types of pressure hose.

BAR-WAY® **BAR-WAY** MFG. CO., STAMFORD, CONN.

warehouse and carpentry shops of Dowty Equipment of Canada destroyed.

Gananoque, Ont.—Frozen food plant, 18 miles east of Kingston, damaged.

Hamilton, Ont.—Rosefield Furniture Store warehouse damaged.

Oshawa, Ont.—Kern's drug store, McMahen's ladies wear shop and apartments destroyed; Cannings Ltd., Lewington's flower shop and Peacock's insurance offices damaged.

Among the Buffs

By Paul C. Ditzel

DOWN BALTIMORE WAY two fire buff clubs revolutionized the art of canteen service by clipping a page from fire department procedure. They employed a mutual aid plan of their own during a nightmare of two simultaneous 6-alarm fires.

Here's the story as reported by Editor Ray Wheatley of Baltimore's Box 414 Association "General Alarm":

On March 27th at 8:08 p.m., the bells went down in Baltimore firehouses and for the next 62 hours there was work aplenty for all hands. Engine 32 and Truck 1 responding to a silent alarm at the F. M. Stevenson Co., manufacturers of slip covers and awnings at 412 East Pratt Street, requested the balance of the assignment at 8:10 p.m. The second was skipped and the blaze became a three-bagger. Ditto the fourth alarm. By 8:27 p.m. the sixth was banging in.

The Box 414 Association's canteen was on the scene in a jiffy and dispensed 1600 cups of coffee, 600 hot chocolates, 65 dozen buns and two cartons of cigarettes.

While the six-alarmer at Box 123 was at its height the buffs were startled to hear an alert on Box 274 come over their radio at 10:08 p.m. The tape just kept spewing from the registers on this baby, too, and fourth and fifth alarms were passed over in favor of the sixth at 10:18—all within the brief space of 10 minutes.

As might be expected from a quickie like this, the blaze was in a lumber yard at Chester and Chase Streets.

"We all realized that this was what we had talked about many times," says Brer Wheatley. "Knowing that we could not service a full six alarm by leaving a five-gallon urn of coffee as we have done in the past when the fire we were servicing was almost out, we immediately called our friends, The Central Alarmers, who service the Baltimore County Fire Department to fill in for us at Box 274. Their response was immediate and enthusiastic. The Central Alarmers served 1080 cups of coffee, 90 hot chocolates and 25 dozen buns. Together, the two buff clubs logged in 23 hours of service.

This was indeed a night to remember. But the end wasn't in sight by a long shot.

Hardly had the Box 414 rig backed into quarters the next day when the bells let go again. By now this was getting somewhat monotonous. Monotonous, that

YESTERDAY...

Fires Were Fought by DEFENSE

1931... Firemen are shown battling a four-alarm fire of possible incendiary origin which destroyed a cooperage plant and warehouse in California early today, doing an estimated $100,000 damage and injuring two firemen. Great clouds of smoke and flame from the fiercely burning structure covered a quarter of a block. (Int. News Photo)

TODAY...

IT'S FIRE ATTACK!

Scott Air-Paks

ARE FIRE ATTACK EQUIPMENT!

YOURS IS A **FIRE ATTACK** DEPARTMENT IF YOU HAVE SCOTT AIR-PAKS ON EVERY FIRE TRUCK

As early as 1948 the editor of Fire Engineering urged more concentration on *FIRE ATTACK* and less on FIRE DEFENSE. ". . . Lack of respiratory protective equipment . . . has not only been responsible for slowing up *FIRE ATTACK* but has resulted in the incapacitation of too many good firefighters."

Today SCOTT AIR-PAKS get men in fast for efficient *FIRE ATTACK* with complete breathing safety! Result, more lives saved and fire losses reduced to a minimum. Take steps NOW to make yours a *FIRE ATTACK* department. Write for complete information.

VISION UNLIMITED

New Scottoramic Face Mask now available for all Scott equipment, (standard on most models), and for replacement on your present breathing apparatus.

SINCE 1932 Scott THE SAFETY-FOR SERVICE!

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

215 ERIE STREET LANCASTER, N. Y.

Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 15 West 57th Street, New York 19, N. Y.

is, if you can consider a six-alarm fire a Playa del Rey tea party.

I'll spare you the horrible details. Suffice it to say, the fire was sounded through Box 2433 on Edison Highway 500 feet East of Federal. Again a lumber yard. And again the bells didn't stop until the six-alarm signal had gone out. The Box 414 Association's wagon limped back into quarters at 11 a.m. on March 30th after serving 2600 cups of coffee and the equivalent of a well-stocked delicatessan to the grateful firemen.

With enough coffee served at these fires to float a fireboat, it's interesting to note the public service also being rendered by the Goodman-Gable-Gould Company of Baltimore. The concern, a certified public adjuster, pays for every coffee cup used by the Box 414 Association. The front cover of the club's current newsletter shows Company Officials William Goodman and Ray Gould presenting a check for $300 to Association President Morton Katz.

Secretary O. Erdman of the Macomb County Firemen's Association, P. O. Box 137, Roseville, Michigan, wants to know if any clubs would send their newsletters to him because he is always looking for new ideas to provide a better or additional service for or by the firemen of Macomb County. I can see Doctor Levin's addressograph machine whirling already.

Speaking of the Bard of San Francisco's fire buffs, Doc. Levin says the Phoenix Society teamed with the fire department in working up a television show commemorating the golden anniversary of San Francisco's Darkest Hour—the 1906 Earthquake and Fire.

Doc's incisive wit recently took this column to task for its failure to attend a fire in Playa del Rey's backyard. He now comes forward to confess he was chagrined last March 2nd when a second alarm was pulled from Box 3211 at Van Ness and Market Streets. Doc's firm is located across from the fire building.

The blaze was in a restaurant on the east side of Van Ness and the fire saw a goodly representation of Phoenix Society members. But someone goofed. Not one of the club members thought to call Doc. Levin at that early hour. He missed the fire. For the first time in the Phoenix Society's history, Doc. Levin was speechless.

Gene Chapman and his beautiful bride, former residents of Minneapolis, have now taken up residence in Balsam Lake, Wisconsin to start a mail order business. One of his best novelties is a set of coasters depicting in color vintage fire apparatus. Their price is $1.00 for an assortment of two dozen, postpaid. The Pony Express reaches Gene at Box 145, Balsam Lake.

The mail also brought a copy of the revamped Third Alarmer of New York's Third Alarm Association. The new editor is Barclay G. McKeough, 43 Riverside Avenue, Ardsley, New York. Former Editor Al. Schuman's job was one of the best I've seen among fire fan magazines and Barclay will have to go some to beat it. He's off to a flying start, however, in one of the breeziest magazines I've read from any club.

Which reminds me of a masterpiece in annual reports: namely the Box 21 Associates Inc., of Dayton, Ohio. Secretary Winston M. Gress, 1325 Wakefield Avenue, Dayton 6, says the club is now in its 21st year of service. Their project for this year will be the purchase of 27 additional portable inhalators. Every club member will carry one in his car. A sad note, however, is the news that the club's founder and first chief, Elmer Lam, died during the past year. The present chief of this excellent organization is Ed. Powers. The excellent annual report was prepared by Historian H. R. Whiteman.

Until the bells go down again next month, please continue to bring me up to date on your club's activities in the past, present and future. The sand dune remains the same: 419 Napoleon Street, Playa del Rey, Calif.

L. A. Commissioners Order Start on 13 New Stations

The Los Angeles board of fire commissioners on February 27 approved a $2,000,000 expansion program as the result of a recently approved bond issue and ordered the immediate purchase of needed sites and construction of 13 new fire stations. The funds are from the sale of the first half of the $4,000,000 bond issue approved by the voters last year.

Paul Ditzel

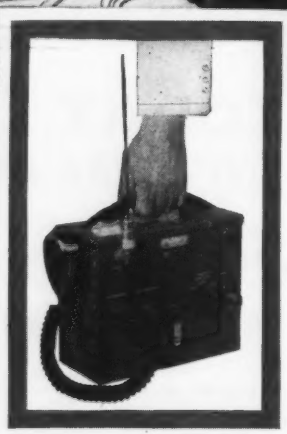
Announcing the Model H/M

PAK-FONE

2-WAY RADIO

- HAND-CARRIED. EXTREMELY COMPACT.
- BUILT-IN LOUD SPEAKER. CONVENIENT MONITORING.
- RELAY SQUELCH. SILENCE BETWEEN CALLS.
- CONNECTOR FOR POWER SUPPLY. SAVES BATTERIES.
- WITH UPC-100, OPERATES FROM 6, 12, 24 VDC AND 117 VAC.
- ON-OFF INDICATOR LIGHT. AVOIDS RUN-DOWN BATTERIES.
- TOP PERFORMER IN ALL COMPETITIVE TESTS.
- A HEIMARK DESIGN. FCC AND FCDA DESIGNATIONS.

The Model H/M Pak-Fone is being widely accepted by Police and Fire Departments because it does not require holding a handset to the ear. Also, the annoying "rushing" characteristic of other hand carried portables on standby is eliminated by the use of a relay squelch.



Industrial Radio Universal Power Converter UPC-100

New power supply operates Pak-Fone and other portable 2-way radio equipment from 6, 12, and 24 volt storage batteries or 117 volts A.C.

Write or wire today for a demonstration in your community or send for literature.

ir INDUSTRIAL RADIO CORP.

428 N. Parkside Ave. • Chicago 44, Ill. • Phone: AUstin 7-8888

Fire Hamstrings Stock Exchange Communications

A minor fire, but one far reaching in effect, burned out four telephone and telegraph systems which send out information on transactions at the New York Stock Exchange, threatening to put what is said to be the most intricate communicating system of any building in the world out of business.

The facilities knocked out by the fire include:

1. The Exchange's administrative switchboard which was cut off from the telephone system in the city. The switchboard has 70 trunk lines connected to more than 400 extension telephones.

2. The building's telephone intercommunication system, which provides a three-number dial system among 400 phones.

3. The quotation service—a complex of lines leading to telephones on the desks of 640 brokers who could dial a code and get either a recorded quotation of the "bid and ask" prices, or a clerk to read the information to him. It handled up to 100,000 calls a day.

4. The ticker service, which transmits to about 2,700 ticker machines throughout the United States, Canada and Cuba the details of transactions on the floor of the Exchange.

Less seriously damaged was another system of telephone connections, a private line complex of 2,000 lines connecting business establishments with their men on the Exchange floor.

The fire started in a basement transformer, raced up to the seventeenth floor of a communications shaft in the Exchange at 11 Wall Street at 8:35 p.m., Friday, May 4. It reduced the cables to a molten mass of metal. Firemen extinguished the fire within 30 minutes of their arrival on the scene, and before the overhaul job was started, more than 100 telephone company repair men had started to work on an around-the-clock schedule to get the systems in working order for Monday morning's Exchange opening, at 10:00 a.m. The job of replacing the 7,200 pairs of wires was a Herculean one, but the repair crews working without letup did the job.

April Fire Losses

Estimated fire losses in the United States during April amounted to $84,624,000 the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $84,624,000 loss represents an increase of 7.6 per cent over losses of $78,632,000 reported for April, 1955, and continues the trend that has been noticeable since the first of the year.

Losses for the first four months of 1956 now total $354,952,000, an increase of 8.5 per cent over the first four months of 1955, when they amounted to $327,140,000.

These estimated losses include an allowance for uninsured and unreported losses.

"We used this INDIAN FIRE PUMP for 31 Years and it's still in good condition"

Neil Le May, Chief Forest Ranger, Wisconsin Conservation Dept., holds a **SMITH INDIAN FIRE PUMP** which they have had in service for 31 years. Chief Ranger Le May thinks: "The **INDIAN PUMPS** are especially fitted to forest fire control work because after 31 years of service, a can is retired merely because of its inadequacy in size rather than inserviceability."

This important statement speaks volumes for the long life of **INDIAN FIRE PUMPS** and their sturdy construction.

INDIAN FIRE PUMPS are approved by UNDERWRITERS' LABORATORIES

Designed right and built right, **INDIAN FIRE PUMPS** last for years despite rough handling and continuous use. That is why they are "choice for quality the world over". Every part is constructed to give rugged wear. Available in either sliding pump type *(as illustrated)* or lever type pump and handle.

SEND FOR NEW CATALOG

D. B. SMITH & CO.

"FOR 70 YEARS THE LEADERS"

406 Main St., Utica 2, N. Y.

Pacific Coast Branch:
Hercules Equipment & Rubber Co., Inc.
San Francisco 7, Calif.

Canadian Agents:
Fleck Bros. Limited
Vancouver, B. C., Canada
C. E. Hickey & Sons, Ltd.
Hamilton, Ont., Canada

Eastman
No. 10
STANDPIPE
TURRET

A small, highly efficient and inexpensive fire fighting deluge gun for permanent mounting. One man can easily direct the streams of three of these guns at one time, locking them into position at will.

The Model 10 Gun is excellent for use on standpipe locations in lumberyards, oil refineries, factories, or any location which has a localized fire hazard.

May be rotated at any angle and locked in position at will

Send for Bulletin 1-56

SAMUEL EASTMAN CO., INC.
CONCORD, NEW HAMPSHIRE

the round table

discussion of current fire department and fire management problems

Calling Off-Duty Firemen

THIS MONTH we publish the first installment of replies received from representative fire chiefs concerning the important subject of calling back off-duty fire fighters, and their utilization along with reserve apparatus, in time of emergency.

Five pertinent questions were asked having to do with the method of calling off-shift personnel, the relative success of the methods employed; suggestions for improving such response; the question of additional compensation for such emergency duty, and how off-duty personnel are used, with spare apparatus, as a reserve.

The replies thus far clearly indicate the fire chief's concern over the question of reserves of personnel and equipment. They indicate that the telephone is the method most relied upon for summoning off-shift men. Some sort of public signal, either whistle, siren or bell, or a combination, is also employed. Radio, both private and commercial, is used by some, either alone or in conjunction with the telephone, to do this alerting.

The procedure of calling in the off-duty personnel varies, but generally this is the task of fire alarm headquarters. Some cities call their personnel direct, utilizing special duty lists; others follow a chain plan, the alarm office calling only certain designated officers (usually company commanders) who in turn fan out the calls.

In at least one state, firemen are required by city ordinance to have telephones in their homes. Some respondents report difficulty in the use of dial phones for summoning off-duty men. Also, in certain localities because fire fighters are permitted to take on outside work, they are unavailable for extra emergency duty.

Respondents generally report a very high percentage of response to emergency calls, the average reported response varying between 90 and 100 per cent of total department personnel. A few report better response to night calls than to day calls. Some cities require that only a certain small percentage (not over 50 per cent at most) of off-duty men shall leave the city, or otherwise not be available in time of need.

The majority of responsible compensate their men in some way for time taken from their off-duty period. The most general form of compensation is giving them additional time off. Some merely give those who returned to duty an equivalent period of off-duty time; others are given time and a half extra for time lost.

Some chiefs report that no requests for compensation have been received and their men understand this is to be part of the job.

A number of departments compensate in cash, some based on hours of service at regular pay rates and a few at overtime rates. One or two reimburse personnel only when they are recalled on a legal holiday.

Almost without exception, departments maintain reserve apparatus and where this is ample in amount to be manned by incoming personnel, the responding men are assigned to this reserve. In some cases, the relieving reserves are dispatched to the fireground to reinforce crews at work.

Readers are invited to contribute to this discussion which will be continued in the July issue. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

Discussion of the Subject

F. R. Dimond, Chief, Hutchinson, Kans.: Off-duty men are called back by telephone.

We usually have 100 per cent of the off-duty men respond to calls for service at large fires.

We do not allow more than seven firemen to be out of the city at one time, and then it is necessary to acquire permission.

We do not compensate off-duty firemen for emergency service.

We have two stand-by trucks that are used for reserve purposes, and also when any mechanical work is being done on any truck on the line.

Zephrin F. Drouin, Chief, Lewiston, Maine: Off-duty fire personnel are called by sounding an outside-alarm system. The dispatchers then make individual calls to fire personnel by telephone.

Our program to date has been very successful. The response is excellent, an average of 98 per cent of the members off-duty responding to the emergency call. One or two members may be out of town during such calls, but when they are in the two cities, and in the event they are working during their

THIS MONTH'S QUESTIONS

How do you call back off-duty firemen in the event of a large fire?

How successful has your method been (i.e., what percentage of off-duty firemen have responded in the past to calls for service at large fires)?

What suggestions do you make for increasing such response?

Do off-duty men receive additional compensation for such emergency service?

Do you maintain reserve apparatus in your department to be manned by off-duty men who respond.

day off on other jobs, they respond and support the day-on platoon.

Off-duty personnel responding to fires are paid $1.25 per hour from the time the alarm was sounded until they are dismissed by the chief engineer.

We have two pieces of apparatus in reserve—an aerial truck and a lighting unit. Our men have been very cooperative. We have found in many instances that the off-duty personnel have responded to ordinary alarms and gladly worked as much as if they were on duty.

E. P. Feaster, Chief, Lincoln, Nebr.: Each member of the department is required to have a telephone. A list of each company is furnished the telephone operator. The officer in charge of the off-shift is called, and he in turn calls his company. If the telephone operator cannot contact the officer, he calls the company for him as soon as possible.

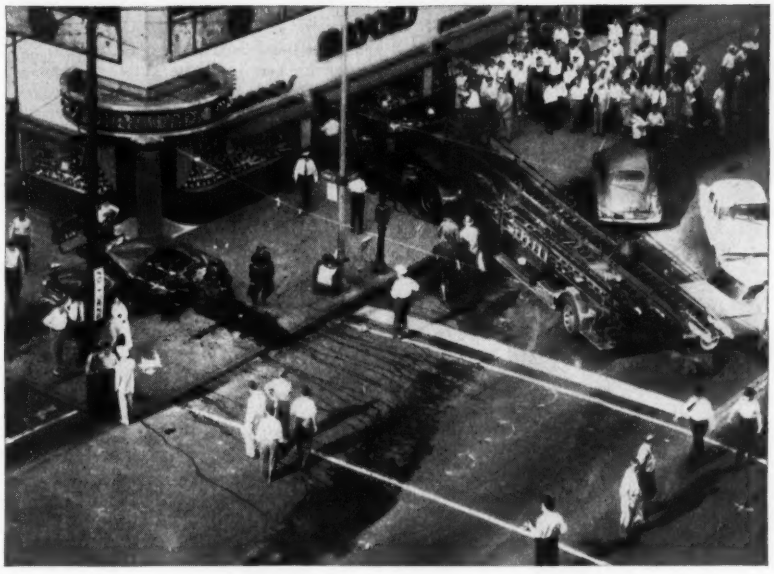
This method has proven very successful in the past and response has been approximately 100 per cent. The first called men start to arrive at designated locations within 15 minutes.

No additional compensation is given for such emergency service.

We have three pieces of extra apparatus that is put in service in case of second alarms. These are assigned according to pre-arranged plans and are manned by off-shift firemen.

Steve Taylor, Chief, Boise, Ia.: We have three regular alarm operators and one relief operator, one superintendent of alarms and an assistant superintendent of alarms. We are fully radio-equipped on all first line equipment. When it is necessary to call in off-duty men, the operator on duty calls two of the off-duty operators who have lists in their homes of all department personnel and their telephone numbers. One operator starts at the bottom of the list, the other from the top, and they continue until they meet, unless they have been instructed to call only a given number. pleted, the off-duty operators report As soon as the calls have been completed, the off-duty operators report

Eliminate This!



with **EL-TEC**

RADIO TRAFFIC CONTROLLERS

Crashes like this Cost Lives . . . Property . . . Money . . . and tie-up badly needed equipment and highly trained personnel. *These tragedies virtually can be eliminated!*

The driver of an emergency vehicle can have uncontested, clear right-of-way for blocks ahead . . . he can stop all traffic on his route. He does it with EL-TEC, an electronics system for controlling traffic from a moving emergency vehicle.

EL-TEC is new, but years of research and development have proved its dependability. The system and equipment have been hailed as the most important stride in emergency traffic safety in many years.

EL-TEC has been commended by the National Safety Council, International Fire Chiefs' Association, International Police Chiefs' Association, Northwestern University's Traffic Institute, various State Safety Committees and Highway Commissions and numerous traffic authorities.

Electronic Protection Inc.

Subsidiary of Standard Coil Products Co. Inc.
2085 North Hawthorne Avenue - Melrose Park, Illinois

The Only FCC Approved System For Emergency Traffic Control

6401

GET THE FACTS!
SEND COUPON TODAY!

You owe it to yourself, your community, your firemen, policemen and all emergency drivers to learn how low-cost, reliable EL-TEC Radio Traffic Controllers can save lives, prevent suffering, cut down property damage, keep all emergency equipment "in service."

ELECTRONIC PROTECTION INC.
Subsidiary of Standard Coil Products Co. Inc.
2085 North Hawthorne Avenue, Melrose Park, Illinois.

☐ Please have representative call.
☐ Please send literature on EL-TEC.

Name_____
Title_____
Address_____
City_____ State_____

to alarm headquarters to assist in handling radio and telephone calls, or to be assigned to other duties.

We have tried a number of different systems for calling the off-shift, but find this one to work out better than any of the others tried. At the last three major fires, the off-duty response was 95 per cent.

For increasing such response, I would make the following suggestion:

1. See that the men thoroughly understand the nature of their duties.
2. Compensate them the best you can for their response.
3. See that their telephone service is good and the list is kept up to date.

Off-duty men receive time off for responding to second alarm fires.

A. W. Leggat, Acting Chief, Mount Vernon, N. Y.: Originally we called our off-duty firemen back in the event of a large fire by sounding a pre-arranged signal over our fire alarm whistles. For a number of years, however, this method has not been used for large fires but has, however, been used for calling men back for emergency work because of hurricanes, storms and Civil Defense exercises.

We now have a key man in each working group who is responsible for notifying the rest of the men in his group when a recall is necessary. He is originally notified by our fire alarm dispatcher by telephone. This method is very satisfactory.

The off-duty men receive no monetary compensation, but are reimbursed by receiving additional time off.

We have one reserve piece of apparatus in our department, but this is manned by men actually on duty at the time of the incident.

If men were called back in the event of a large fire, they would report immediately to the fire area and await orders from the chief officer on duty.

M. B. Houghton, Chief, Elkhart, Ind.: Off-duty firemen are called back by telephone. All firemen are required to have telephones.

About 95 per cent of our off-duty men respond to calls for service at large fires.

We are well pleased with the off-shift response, considering illness, Kelly days and vacations.

The men are not paid for such emergency service.

We maintain reserve apparatus manned by pre-arranged off-duty men at all times.

Frank Everett, Chief, Rochester, Minn.: The dispatcher calls off-duty firemen.

About 95 per cent of the off-duty men respond.

Off-duty men going out of town must call the dispatcher and have him put their names on the board. When they return, they must call to have their names taken off.

Our men do not receive any compensation for such emergency service.

Two pumpers and one ladder truck are kept in reserve.

Jesse G. Hunter, Chief, Cedar Rapids, Ia.: The fire alarm operator calls the off-duty officer of each company and the officer in turn calls his men. The mechanic, bureau men and fire alarm men are called by the operator.

We have a response of between 90 and 100 per cent of off-duty men.

Our system has worked very well for all the large fires we have had.

The men are not compensated for such emergency service. This is part of the job. With all the training they receive pointing to a real service to the community, I am sure the men would feel bad if they weren't called in on a large fire.

We do maintain reserve apparatus.

Dean B. Muhlesteen, Chief, Provo, Utah: We have a telephone command conference board allowing us to call almost all the firemen at one time.

Late night fires have resulted in practically 100 per cent call-back. We require the men to be available for call-back part of the time. Provo firemen work 24 hours, then are subject to call back the next 24 hours. The third 24 hours they are free.

The men receive one and a half times the call-back in extra time off. I feel they should receive extra pay for off-duty work.

We do maintain reserve apparatus.

Here's a break for hard-working firemen!

Dragon® Fire Pumps are designed with the fireman in mind...

1. They come completely assembled in c special carton. Just lift out the pump... fil with water... go into action!
2. The special Dragon harness is easy to get into and designed so the pump rides high where it can't throw the fireman off balance or interfere with walking.
3. Just a few easy strokes of the pump lever gives the operator a *continuous* flow of water he can direct right where it does the most good. And a mere twist of the shut-off nozzle gives either solid stream or spray *instantly*.
4. When he is using a Dragon Fire Pump, the fireman can take his hands off both shut-off nozzle and pump lever to use rake, shovel, or other tool.
5. There's no pump packing to dry out: even after standing idle for long periods, a Dragon Fire Pump is ready for instant use.

Yes, the way to boost firefighter efficiency and cut down fatigue is to specify Dragon Fire Pumps →

VALUABLE DISTRIBUTORSHIPS AVAILABLE, WRITE TODAY.

Dragon FIRE PUMPS

now available in 2 models

No. 150-S—Stainless Steel Tank

No. 150-G — Galvanized Tank: Cold-rolled steel, hot-dipped galvanized after fabrication.

All units equipped with brass pumps; all tanks seam welded. Capacity 5 gallons

DRAGON FIRE PUMPS meet Underwriters' Laboratories requirements and can be supplied with the UL label of inspection attached.

PARCO PRODUCTS COMPANY

PENNSBURG, PENNSYLVANIA

World-Wide Fire News

Firemen Resign Over Right To Put on False Noses

The entire fire brigade of Caramet-sur-Mer, a Breton fishing village, has resigned to defend the right to wear false noses and moustaches on the Feast of Saint Barbara, patron saint of gunners and firemen.

They paraded through Camaret streets in carnival disguise on December 4 (St. Barbara's Day), but the commanding officer disapproved and sent every fireman a severe letter, reminding him of the dignity of his profession.

The firemen decided they would not tolerate "military discipline" after working hours, and submitted their resignations. They said they would answer emergency calls until the commanding officer has recruited a new brigade.—*The Fireman (Great Britain) Jan. 1956*

Malicious False Alarms

In an effort to reduce the number of malicious false alarms, Liverpool Corporation is having stencilled on each of its street fire alarm boxes the following extract from the Fire Services Act, 1947:-

"Any person who knowingly gives, or causes to be given, a false alarm of fire is liable, on summary conviction, to a fine not exceeding £25, or to imprisonment not exceeding three months, or both such fine and imprisonment."

It is proposed that, on a conviction being obtained, small notices giving details of the case shall be affixed to the pillars of street fire alarms. No action by the corporation to reduce the number of false alarms by public telephone is reported.

Stratford, Essex justices have sent Alfred Threkall, 27, labourer, to prison for three months for having maliciously transmitted two false alarms of fire from a public telephone box to West Ham Fire Brigade. He had three previous convictions for sending false alarms.—*The Fireman (Great Britain) Nov. 1948*

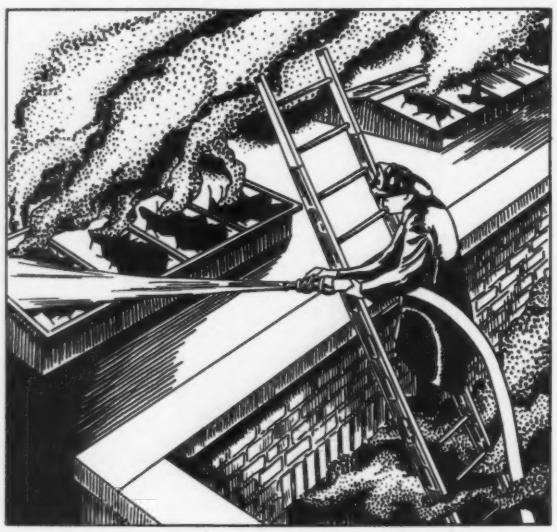
Fresh From the World News Ticker

In Southport, England, an explosion destroyed a home in a new housing project April 6, killing five members of one family, including three small children. Cause of blast not disclosed. . . . A fire on the night of April 24 destroyed 13 buildings in Sindirgi, Turkey. The fire started when a movie projector exploded in a moving picture theatre. No casualties. . . . Flames from a welder's torch started a small fire aboard the atomic-powered submarine Nautilus April 28. Navy reported blaze was quickly extinguished and damage "slight". . . . A British scientific officer in charge of rocket trials at the Woomera Rocket Range, Australia, received fatal injuries in the premature explosion of a missile being prepared for firing on April 29,

HERE'S A BADGE YOU CAN
POLISH
POLISH
POLISH
HI-GLO
V.H. BLACKINTON & CO., INC.
COMM OF MASSACHUSETTS
ATTLEBORO FALLS
MASS.
Hi-Glo
THIS BADGE WILL MAKE YOU THINK TWICE BEFORE ORDERING ORDINARY GOLD BADGES
Why . . . Because this new HI-GLO Badge is different. It is made from an entirely new material—a rich looking golden metal that is solid gold color throughout. That's why you can polish a HI-GLO badge for a lifetime. Every HI-GLO badge will have deluxe enamel lettering and a ruby colored stone set in the eye of the eagle. (Stone optional at extra charge.) You can see, the new HI-GLO badges will be something special, a distinctive badge for those who want the very finest gold color badge.
Your Blackinton equipment supplier has samples of the new HI-GLO badge. Ask him for more information.
BLACKINTON
V. H. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.

five others were injured. "Burning love" was more than just a term for Giuseppe Arrieri's attachment for Anna Maria Tripaldi, of Taranto, Italy. Giusepp', 18, courted Maria 17, despite parental objection. One April day papa Tripaldi caught'em together again, threw a can of gasoline at Giuseppe and set him afire. Youth was hospitalized with serious burns. . . . Three crew members, a carpenter and two galley boys, were killed in a fire aboard the British Liner Cairnavon in the Leith docks in Edinburgh, Scotland on May 1. Two other persons were injured. Three cabins and parts of ship's superstructure were damaged before the fire was controlled. . . . A minor hold fire aboard the freighter Oregon Sword was extinguished by Portland, Maine, firemen wearing masks to avoid the poisonous fumes of sulphur (*Thanks James Rulman*). . . . The 7,000-ton Freighter Antonio limped into Bermuda at half speed after an explosion flooded the starboard bow hold compartment. No injuries, no serious fire reported. . . . Arson was reportedly indicated in an evident attempt to burn the office of Tass, Soviet news agency, in London, April 14. Firemen and police were called to the Tass office on the first floor of the Reuter Building on Fleet Street where the door and wall around it were scorched. The charred remains of some unidentified combustible substance were found on the floor. . . . A mother and eight of her eleven children were killed by fire April 30 in Mont Louis, Que. Town authorities said an explosion occurred when one of the children apparently tried to light a stove with naphtha. Resulting blaze trapped victims in their frame house. . . . A fire late in April that destroyed 8,000 acres of timberland in Lincoln National Forest, New Mexico, was finally brought under control by 1,150 men after fire breaks ten to 30 feet wide were dug. . . . On May 5 an explosion blasted a military powder factory at Corroios, Portugal, 10 miles from Lisbon. Five bodies were taken from the wreckage. Fifteen were injured. . . . About 80 per cent of Mexico's telephone service was paralyzed April 16 by a union strike against the Telefonos de Mexico. Master switches were pulled, stopping service on approximately 450,000 telephones throughout the nation.

"WHAT'S WRONG WITH THIS PICTURE?"*



NEW . . . BRADY visual training aids help you get *correct* action, on the fireground, from all firefighters!

LOW COST BRADY training transparencies, *in color*, come in handsome, portable kits. A lightweight overhead (front-of-the-room) projector can be included that permits Instructor to keep eye-contact at all times. Eliminates need for dimming lights!

SUBJECTS include: Basic (Structural) Firefighting, Radio, Effective Streams, Aircraft Firefighting and Rescue, Pumps, Indirect Methods of Extinguishing Interior Fires.

USED BY THE ARMED FORCES, and County, Civil Defense and University firefighting programs, they can put *new life* into your training program too!

SEND FOR FREE DETAILS...NOW!

ROBERT J. BRADY COMPANY
WASHINGTON, 7, D.C.

ROBERT J. BRADY COMPANY
3255 M Street, N.W.
Washington 7, D. C.

Please send FREE folder to:

Name.....

Street.....

City.....Zone.....State.....

* 1. No life belt. No optional leg lock when life belt not available.
2. Hose line should be between ladder rungs with hose strap attached.
If line was operated in this fashion, firemen would be catapulted right off ladder and hoseline would whip around endangering others.

Tanker Burns in English Channel

Explosions and fire wrecked the 9,075-ton Norwegian tanker Erling Bothen following a collision with the 7,180-ton Liberian freighter Santa Rosa on May 5, resulting in the death of one crewman of the tanker. Six others were burned seriously.

The ships collided in the fog-shrouded English Channel about 11 miles off Royal Sovereign Lighthouse. Explosions following the crash sent flames 800 feet into the sky and burning oil covered the area.

The crew of the tanker abandoned the blazing ship. Between 40 and 50 survivors were picked up by rescue craft and the Santa Rosa. Crewmen of the French tug Jean Bart battled their way onto the blazing hulk to get a towline aboard. They found the body of a young cabin boy.

The tug took the tanker in tow, still belching clouds of oily smoke and headed for Dunkirk with the tanker's captain and officers aboard.

Blame for the collision has not been established.

Last Stand Fails—Firemen Called

The military at First Army Headquarters on Governor's Island, in lower New York Bay, were in a spot April 21 last, but according to the press, "a valiant ally came to the rescue with an amphibious operation" and saved the day.

A fire broke out at 8:30 A.M. in the attic of a three-story combined office building and living quarters of the vintage of World War II, or was it World War I? It matters not—you've all seen the type of built-to-burn structure which infested the nation's military establishments, too many of which remain today as fire menaces.

Troops were called out on the Island, together with what passes for a fire brigade, to combat the blaze but—and we again quote the press: *"After an hour it was decided to call the city's Fire Department for reinforcements."*

One fireboat, Engine 57, steamed from its berth at the Battery, across the narrow

neck of water, and four fire rigs were sent over by ferryboat. They promptly put out the blaze.

Nothing suspicious about the fire, the Fire Department reported, but the Army, surveying some thoroughly soaked mattresses, typewriters and other impediments, ordered an investigation.

Desire for Work Ignites Fireman

If it didn't have a date line "Hanover, Germany, May 5", we'd suspect it was mere local news. But it just goes to show that all-fired firemen can set fires in Germany as well as they can in this country.

There's the case of Fireman Gerhard Roseebode from the neighborhood of Hanover, Germany. Seems the desire for work (?) got so hot it ignited Gerhard, who went in for arson in what might have been a big way. According to press reports, he set fire to a barn, then raced home and changed into his uniform and joined his fellow firemen in fighting the blaze.

Gerhard admitted he did it because it was a "dull time for fires" and his firehouse needed practice. He believed in teaching-by-doing, evidently. At any rate, the barn burned to the ground.

The local judge failed to see eye to eye with Gerhard. He sentenced him to two years in prison and ordered him to pay for the barn.

Brother Gerhard isn't fighting fires right now.

Fire Ravages Japan

A wind-fanned fire swept through Tokiwa, about 150 miles north of Tokyo on April 17 burning down 600 houses.

When a wind-swept fire raged out of control for 2½-hours 300 persons were left homeless in Mito, Japan, April 21.

One person was killed, one reported missing, 20 injured, in a fire that destroyed 600 of 2,700 houses in the resort town of Awara, Japan, 12 miles north of Fukui, on April 23.

About 235 houses burned down May 3 in a two-hour fire that left 1,300 homeless, in Otaru, southeast of Hokkaido. No one reported injured.

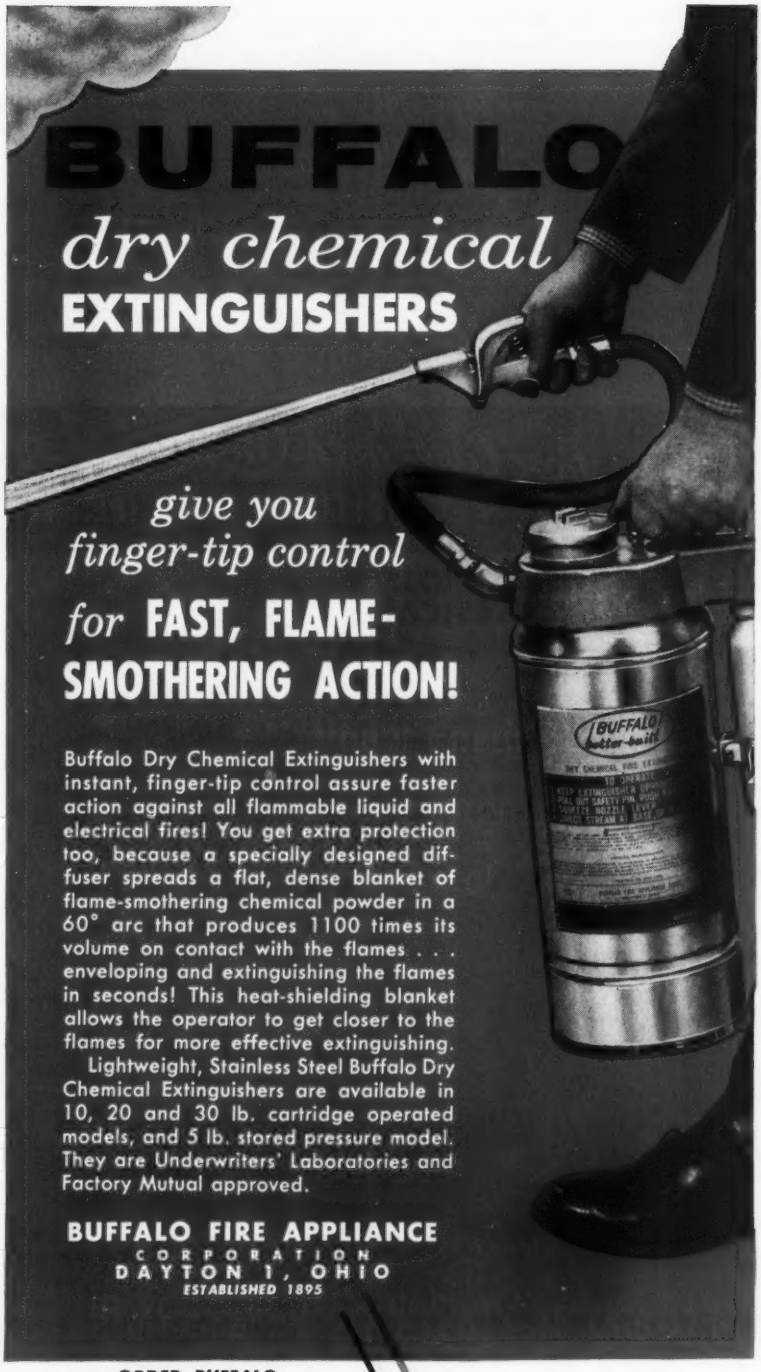
Woman Tries to Burn White House

A middle-aged woman who gave her name as Mrs. Julia M. Chase, was placed under medical observation after she tried to set fire to the White House and Executive Office Building on April 3.

She told Secret Service agents she set the fires because she "had a lot of trash and just wanted to burn it."

The woman set the first of a series of five fires in the famed Red Room of the White House while President Eisenhower worked in his office about 80 yards away.

The president never was in danger, and none of the fires caused any appreciable damage. The woman reportedly admitted setting all five fires and while she was being questioned tried to set two more.


BUFFALO
dry chemical
EXTINGUISHERS
give you
finger-tip control
for FAST, FLAME-
SMOTHERING ACTION!
Buffalo Dry Chemical Extinguishers with instant, finger-tip control assure faster action against all flammable liquid and electrical fires! You get extra protection too, because a specially designed diffuser spreads a flat, dense blanket of flame-smothering chemical powder in a 60° arc that produces 1100 times its volume on contact with the flames . . . enveloping and extinguishing the flames in seconds! This heat-shielding blanket allows the operator to get closer to the flames for more effective extinguishing.
Lightweight, Stainless Steel Buffalo Dry Chemical Extinguishers are available in 10, 20 and 30 lb. cartridge operated models, and 5 lb. stored pressure model. They are Underwriters' Laboratories and Factory Mutual approved.
BUFFALO FIRE APPLIANCE
CORPORATION
DAYTON 1, OHIO
ESTABLISHED 1895
ORDER BUFFALO
FIRE PROTECTION FROM YOUR
INDUSTRIAL DISTRIBUTOR TODAY!
he's listed in the yellow pages
BUFFALO
better-built
the right extinguisher for every
fire hazard . . . plus a complete
line of brass goods and hose

U. of Maryland Offers Fire Protection Course

The College of Engineering, Glenn L. Martin Institute of Technology, University of Maryland, has announced a new four-year curriculum in Fire Protection leading to the degree of Bachelor of Science. The new program begins with the opening of the fall semester in September, 1956.

The program is planned for those who desire a career in fire protection and prevention and is designed to emphasize the scientific and technical base. The first two years of the course will be nearly identical with those of other engineering fields. In addition, certain cultural and elective courses are included as well as Air Force ROTC. The facilities of the Fire Service Extension Department will be used for theoretical and laboratory work supplemented by field problems and trips to industrial and municipal fire protection installations.

Admission requirements will be those of the College of Engineering, although more emphasis will be placed upon good grades and other evidence of probable success rather than on a fixed pattern of subject matter. Four units of English, three and a half units of mathematics and one unit each of social and natural sciences are required in addition to electives. High school graduates lacking certain units of mathematics, but otherwise qualified, can take the subjects in a special program.

Persons interested in enrolling should apply to the Director of Admissions, University of Maryland, College Park, Md.

Fire Protection Curriculum
University of Maryland

	Semester I	Semester II
Freshman Year		
Composition and American Literature	3	3
General Chemistry	4	4
Public Speaking	–	2
Elementary Mathematical Analysis	5	5
Mechanical Drawing	2	2
Introduction to Fire Protection	0	–
Basic Air Force ROTC	3	3
Physical Activities	1	1
TOTAL	18	20
Sophomore Year		
American Government	3	–
Sociology of American Life	–	3
Calculus	4	4
General Physics	5	5
Elementary Organic Chemistry	2	2
Elementary Organic Laboratory	2	2
Basic Air Force ROTC	3	3
Physical Activities	1	1
TOTAL	20	20
Junior Year		
*Composition and Literature	3	3
Fundamentals of Economics	3	–
Property Insurance	–	3
Industrial Safety Education	2	2
Technical Writing	2	–
Principles of Mechanical Engineering	–	3
Elements of Hydraulics	3	–
Elements of Quantitative Analysis	–	4
Fire Protection Fundamentals	3	3
Fire Causes and Hazards	3	–
Fire Hydraulics Applications	–	2
TOTAL	19	20
Senior Year		
*History of American Civilization	3	3
Fundamentals of Electric Engineering	3	–
Thermodynamics	–	3
Elements of Fire Protection	3	3
Tactics of Fire Control	3	–
Essentials of Fire Protection	–	3
Fire Service Organization	3	–
Fire Inspection Practices and Methods	2	2
Electives	3	6
TOTAL	20	20

*Air Force ROTC may be substituted.

Volunteer Firemen Benefit Bill Signed

New York's Governor Harriman has signed a bill sponsored by the Joint Legislative Committee on Fire Laws which simplifies firemen's benefits and places them under a single state law. Previously volunteer firemen in New York State were protected under two laws which were confusing and cumbersome. This caused delay in payment of benefits for injury in the line of duty. After three years of study, the Joint Legislative Committee consolidated and simplified the procedures into one law.

Better Hose Care-with CIRCUL-AIR
HOSE CONDITIONING EQUIPMENT
WASHERS • DRYERS • TURN-TABLES • STORAGE RACKS

NEW ROTO-JET HOSE WASHER
AUTOMATICALLY
WASHES—RINSES—DRAINS HOSE

ROTO-JET Washes, Rinses, Drains hose thoroughly and quickly. Hose is self-propelled. Simple one man operation. With or without detergents ashes, dirt, mud and sludge are automatically scrubbed out and flushed away. Saves time. Lengthens hose life.

FIRE HOSE DRYER

The patented, electrically operated Circul-Air hose dryer circulates pre-warmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life. No other drying method is so fast—so economical—so easy to use. Circul-Air is the preferred drying method in over 3,000 leading Fire Departments.

ACCEPTED—APPROVED
RECOMMENDED

Approved by Underwriters' Laboratories . . . and Canadian Standards Association. Recommended by all leading fire hose manufacturers.

UL LABORATORIES APPROVED

PORTO-RAK HOSE STORAGE and LOADING UNIT

Saves valuable space. Holds 1800 ft. of 2½" hose—proportionately more of 1½"—in an 8 ft. space (when loading table is detached). Roll it right up to the truck for complete hose reload—out of the way when not in use. Equipped with locking fiber wheeled casters.

WRITE FOR NEW LITERATURE

If you are planning to build or remodel, send for our brochure "Fire Station Design."

THE CIRCUL-AIR CORPORATION 575 EAST MILWAUKEE DETROIT 2, MICHIGAN

Schools and Conferences

June 18-22 (tentative)—**Mississippi State Fire School.** Annual meeting, Mississippi State College, Starkville, Miss. Director, J. I. Fetters, Administrative Assistant, University of Missouri, Room 101, Building T-11, Columbia, Mo.

June 18-22—**South Dakota Firemen's Association.** Annual meeting and fire school, Brookings, S. D. Director, J. I. Fetters, Administrative Assistant, University of Missouri, Room 101, Building T-11, Columbia, Mo.

June 19-22—**Michigan Fire College.** Annual meeting, University of Michigan, Ann Arbor, Mich. Director, Francis Hartman, Supervisor of Firemanship Training, 4524 Administration Building, University of Michigan, Ann Arbor, Mich.

June 20-22—**Montana State Volunteer Firemen's Association.** Annual meeting, Butte, Mont. Convention Chairman, William R. McDonel, P. O. Box 763, Butte, Mont.

June 20-23—**Colorado State Firemen's Association.** Annual convention and fire school, Durango, Colo. Director, Lou Gibbs, 1331 Garfield Avenue, Loveland, Colo.

June 21-23—**Utah Firemen's Training School.** Annual meeting, Salt Lake City, Utah. Director, Assistant Chief D. E. White, Salt Lake City Fire Department, 140 East First Street South, Salt Lake City, Utah.

June 21-23—**Hudson Valley Volunteer Firemen's Association.** Annual meeting and parade, Lake George, N. Y. Secretary, Charles M. Fales, 92 Clove Avenue, Haverstraw, N. Y.

June 23—**New Jersey State Fire Chiefs' Association.** Summer meeting, Keyport, N. J. Secretary, Clarence H. Dougal, 2 Girard Avenue, East Orange, N. J.

July 23-25—**Wisconsin State Fire Chiefs' Association.** Annual meeting, Wausau, Wis. Secretary-Treasurer, Chief Douglas J. Dunlop, 1463 Underwood Ave., Wauwatosa 13, Wis.

June 25-26—**Saskatchewan Association of Fire Chiefs.** Annual meeting, North Battleford, Sask. For information, contact Chief Norman Carsewell, Fire Headquarters, North Battleford, Sask.

June 25-28—**New England Association of Fire Chiefs.** Annual meeting. The Wentworth, Portsmouth, N. H. Secretary-Treasurer, John O'Hearn, 206 Mt. Auburn Street, Watertown 72, Mass.

June 27—**Central Western Firemen's Association.** Annual meeting, Germantown, Ohio. Secretary, Roger C. O'Donnell, Covington, Ohio.

June 28-30—**Southern New York Volunteer Firemen's Association.** Annual meeting, drill contests and parade, Islip, N. Y. Secretary, Ernest Stoll, Snedecor Avenue, Bayport, N. Y.

June 28-30—**Northern Central New York Volunteer Firemen's Association.** Annual meeting, Manchester, N. Y. Secretary, Samuel J. Pitcher, 35 Dayton Street, Rochester 21, N. Y.

June 29-July 1—**International Fire Buff Associates.** Annual meeting, Newark, N. J. For information contact the host association, The Bell and Siren Club, Inc., William E. Conradi, Secretary, 86 Wakeman Avenue, Newark 4, N. J.

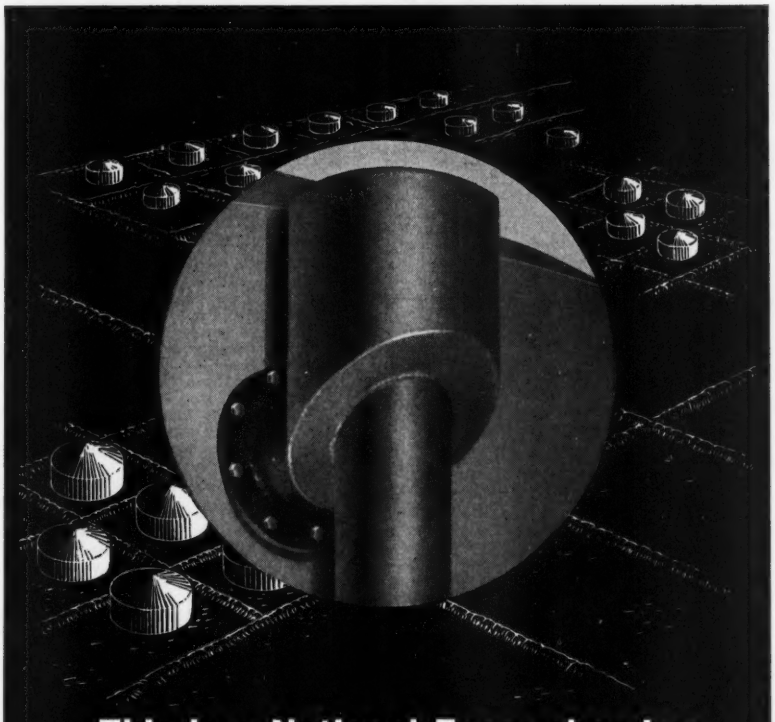
July 8-13—**Texas Firemen's Training School.** Annual meeting, Texas A & M College, College Station, Tex. Director, Henry D. Smith, Acting Chief, Firemen's Training School, Engineering Extension Service, A & M College, College Station, Tex.

July 9-10—**Georgia State Fire College—Arson Investigators' Course,** to be held at #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta, Ga.

July 9-13—**Virginia Fire Training School,** to be held at the College of William & Mary, Williamsburg, Va. For information contact Chief Elliott W. Jayne, Williamsburg Fire Department, 106 South Henry St., Williamsburg, Va.

July 9-13, Sept. 10-14, Oct. 22-26—**Pennsylvania Fire School**—Operation and Maintenance Fire Apparatus Course, to be held at Lewistown, Pa. Director, Arthur Espey, Box 631, Lewistown, Pa.

July 10-12—**Louisiana State Fire Marshal's Arson and Fire Prevention Conference.** Annual meeting, Roosevelt Hotel, New Orleans,



This is a National Foam chamber
atop a gasoline storage tank.
Thousands of these chambers,
throughout the world, provide
instant control of fire
in flammable liquids
worth millions of dollars.
Are the flammable liquids
in your plant protected?
Write for advice on engineered
foam fire protection by

NATIONAL FOAM System, Inc.
West Chester, Pa.

NATIONAL FOAM FIRE PROTECTION SYSTEM

Specializing exclusively in engineered foam systems, portable units, and a complete line of fire-fighting foam products.

La. Course open to any fire service and law enforcement personnel. For information contact Sidney S. Bowman, State Fire Marshal, New Orleans 16, La.

July 11-13—**Central Missouri Fire Conference.** Annual meeting, University of Missouri, Columbia, Mo. Director, J. I. Fetters, Administrative Assistant, University of Missouri, Room 101, Building T-11, Columbia, Mo.

July 12-14—**Central New York Firemen's Association.** Annual meeting, drill contests and parade, Oneonta, N. Y. Secretary, George W. Lang, 10 Ellwood Avenue, Cortland, N. Y.

July 15—**Nebraska State Fire School.** Regional meeting, Scottsbluff, Neb. Director, Otto B. Johannes, 2604-12th Street, Columbus, Neb.

July 18-21—**Washington Fire Training Conference.** Annual meeting, Everett, Wash. Director, Captain J. R. Cook, Conference Supervisor, Washington State Firemen's Association, 1712 Harvard Avenue, Seattle, Wash.

July 20-21—**Hudson-Mohawk Volunteer Firemen's Association.** Annual meeting, drill contests and parade, Rensselaer, N. Y. Secretary, Harold A. Gass, 3058 Albany Street, Schenectady 4, N. Y.

July 21—**Central North Shore Volunteer Firemen's Association.** Annual invitation drill and parade, Central Islip, N. Y. For information, contact Captain John S. Brewer, 96 Carleton Avenue, Central Islip, N. Y.

July 21—**International Fireman's Day.** Annual meeting, Gananoque, Ont. Secretary, Gerald F. Hampton, Gananoque, Ont.

July 23-25—**Western New York Volunteer Firemen's Association.** Annual meeting, emergency first aid tournament, drill contests and parade, Batavia, N. Y. General Convention Chairman, Fred G. Wolf, P. O. Box 130, Batavia, N. Y.

July 23-27—**West Virginia State Fire School.** Annual meeting, Morgantown, W. Va. Director, R. E. Hanna, Jr., Supervisor, Fire Service Extension Schools, West Virginia University, Morgantown, W. Va.

July 23-27, Sept. 24-28—**Pennsylvania Fire School**—Standard Fire Fighting Course, to be held at Lewistown, Pa. Director, Arthur Espey, Box 631, Lewistown, Pa.

July 26-28—**Montana State Firemen's Association.** Annual meeting, Livingston, Mont. For information, write Assistant Chief C. C. Welling, Fire Headquarters, Livingston, Mont.

July 27-28—**New York-Penn Firemen's Association.** Annual meeting, Horseheads, N. Y. General Chairman, Chief George Sullivan, Horseheads, N. Y.

July 31-Aug. 3—**Michigan State Fire Chiefs' Association.** Annual meeting, Grand Rapids, Mich. Secretary, Chief Harry L. Ridout, Fire Headquarters, Muskegon Heights, Mich.

Aug. 1-3—**Southwestern New York Association of Volunteer Firemen.** Annual meeting and parade. Gowanda, N. Y. Secretary, Samuel J. Beckman, Versailles Road, R. F. D. No. 1, Lakeview, N. Y.

Aug. 3-6—**Ontario Provincial Firemen's Association.** Annual meeting, Port Colborne, Ont. For information contact Chief Frank T. Dimond, Port Colborne Volunteer Fire Company, Port Colborne, Ont.

Aug. 6-11—**Pennsylvania Fire School.** Annual meeting, Lewistown, Pa. Director, Arthur Espey, Pennsylvania Fire School, Lewistown, Pa.

Aug. 6-31—**Florida State Fire College.** Four weekly sessions, Ocala, Fla. Director, W. H. Barnett, Superintendent Florida State Fire College, P. O. Box 785, Ocala, Fla.

Aug. 12—**Nebraska State Fire School.** Regional meeting, Ansley, Neb. Director, Otto B. Johannes, 2604-12th Street, Columbus, Neb.

Aug. 13-15—**University of Wisconsin Fire School.** Annual meeting, University of Wisconsin, Madison, Wis. Director, James J. Lichty, Supervisor, Business Institutes, University of Wisconsin, P. O. Box 2098, Madison 5, Wis.

Aug. 13-17—**Pennsylvania Fire School—Fire Department Officership Course,** to be held at Lewistown, Pa. Director, Arthur Espey, Box 631, Lewistown, Pa.

Aug. 13-17—**International Association of Fire Fighters.** Annual meeting, Montreal, Que. Secretary-Treasurer, George J. Richardson, A. F. of L. Building, Washington, D. C.

Aug. 20-24—**Tennessee State Fire Service School.** Annual meeting, Mid-Tennessee State College, Murfreesboro, Tenn. Director, S. Elkins, Fire Department Instructor, State Board for Vocational Education, 215 Chestnut Street, Chattanooga, Tenn.

Aug. 21-24—**Pacific Coast Inter-Mountain Association of Fire Chiefs.** Annual meeting, Sacramento, Cal. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Aug. 22-25—**Montana State Firemen's Association.** Annual fire school, Polson, Mont. For information contact Chief Clayton Brown, Polson Volunteer Fire Department, Polson, Mont.

Aug. 26-28—**New York State Permanent Firemen's Association.** Annual meeting, Seneca Falls, N. Y. Secretary-Treasurer, Robert E. Mills, 420 Plymouth Drive, Syracuse 6, N. Y.

Aug. 27-31—**Western Pennsylvania Fire School.** Annual regional school, California, Pa. Secretary, J. A. Silbaugh, c/o Fire Department, Uniontown, Pa.

Aug. 30-Sept. 1—**West Virginia State Firemen's Association.** Annual meeting, Hinton, W. Va. For information, contact S. H. Boland, Chief of Fire Department, Hinton, W. Va.

Sept. 3-4—**Georgia State Fire College—Inspectors' Course,** to be held at #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta 3, Ga.

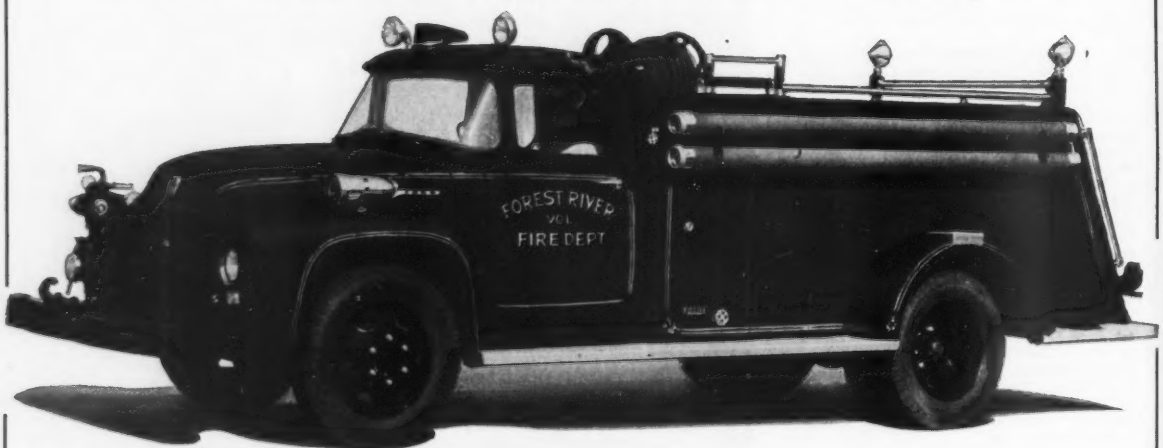
Sept. 4-7—**Maryland Short Course for Firemen.** Annual meeting, University of Maryland, College Park, Md. Director, Robert C. Byrus, Director of Fire Service Extension, Box 85, University of Maryland, College Park, Md.

September 9—**Southern Wisconsin and Northern Illinois Firemen's Association.** Annual school, Savanna Ordnance Depot, Savanna, Ill. For further information, write program secretary, Kenneth Holt, Cassville, Wis.

Sept. 10-13—**Canadian Association of Fire Chiefs.** Annual meeting, Vancouver, B. C. Secretary-Treasurer Chief Allen Clark, Box 456, Lakefield, Ont.

Sept. 10-14—**Ohio State Fire School and Arson School.** Annual meeting, Ohio State University Campus, Columbus, Ohio. Director, Dr. Harvey Walker, Ohio State University, Columbus, Ohio; Co-Director, Wayne Jenkins, Chief of Fire Prevention, State Fire Marshals'

500 Gallon Darley Ford Pumper



The pump is the Darley Champion Type KFF500 manufactured exclusively by W. S. Darley & Co. and used on Champion Fire Apparatus. A Gear Drive centrifugal with superior engineering features which guarantee brilliant performance throughout the entire range of pumping requirements for fire fighting.

The KF Series Champions are double duty fire pumps which provide the complete range of volume performance for heavy streams plus the fire smashing efficiency of fog.

Write for Fire Equipment Catalog and Fire Apparatus Booklet

AT YOUR SERVICE: Sales and Service Representatives — East, Midwest, North, South

A few Territories open for Sales Representatives. Write us.

W. S. DARLEY & CO., Chicago 12

Factories — Chicago and Chippewa Falls, Wis.

Office, Wyandotte Building, Columbus, Ohio.

Sept. 10-14—**Virginia State Fire School.** Annual meeting, Norfolk, Va. Director, Clay A. Easterly, Fire Marshal, P. O. Box 1112, Martinsville, Va.

Sept. 11-14—**Indiana State Fire School.** Annual meeting, Purdue University, Lafayette, Ind. Director, Professor Shelby Gallien, Public Safety Institute, Purdue University, West Lafayette, Ind.

Sept. 14-15—**Piedmont Fire Safety Seminar.** Annual meeting, Winston-Salem, N. C. Chairman, W. G. Dunham, c/o Winston-Salem Chamber of Commerce, Winston-Salem, N. C.

Sept. 14-15—**Jefferson County Volunteer Firemen's Association.** Annual convention and tournament, Dexter, N. Y. Secretary, Lewis Z. Horr, Great Bend, N. Y. Chairman, Chief Ralph Lamon, Fire Headquarters, Dexter, N. Y.

Sept. 16—**Nebraska State Fire School.** Regional meeting, Imperial, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

Sept. 17-18—**New Hampshire Fire Chiefs' Club.** Annual training school, Grenier Air Force Base, Manchester, N. H. For information, write Chief Robert Douglas, Base Fire Department, Grenier Air Force Base, Manchester, N. H.

Sept. 17-20—**International Municipal Signal Association.** Annual meeting, Denver, Colo. Secretary, Irvin Schulsinger, 130 West 42nd Street, New York 36, N. Y.

Sept. 18-19—**Iowa Firemen's Association.** Annual meeting, Red Oak, Ia. Secretary-Treasurer, Carl H. Fuchs, 2749 Kinsey Avenue, Des Moines, Ia.

Sept. 20-22—**Westchester County Volunteer Firemen's Association.** Annual meeting and parade, North Tarrytown, N. Y. Secretary, John R. Bailey, Box 1, Baldwin Place, N. Y.

Sept. 30—**Nebraska State Fire School.** Regional meeting, Atkinson, Neb. Director, Otto B. Johannes, 2604 - 12th Street, Columbus, Neb.

Oct. 4-6—**Ohio Fire Chiefs' Association.** Annual meeting, Hamilton, Ohio. General Chairman, Chief George Schlotterbeck, Fire Headquarters, Hamilton, Ohio.

Oct. 8-9—**Georgia State Fire College—Fire Engineers' Course,** to be held at #7 Fire Station, Atlanta, Ga. Director, Harry Phillips, 46 Courtland Street, S. E., Atlanta 3, Ga.

Oct. 15-18—**Kansas Fire School.** Annual meeting, University of Kansas, Lawrence, Kans. Director, Clyde A. Babb, 111 Fraser Hall, University of Kansas, Lawrence, Kans.

Oct. 22-26—**National Safety Council.** Annual Safety Congress and Exposition, Chicago, Ill. For further information write R. L. Forney, Secretary, National Safety Council, 425 N. Michigan Avenue, Chicago 11, Ill.

Oct. 23-25—**Illinois Firemen's Association.** Annual meeting, Springfield, Ill. Secretary, Roy W. Alsip, Box 8, Champaign, Ill.

Oct. 24-26 (tentative)—**Arizona State Fire Training School.** Annual meeting, Phoenix, Ariz. Director, Battalion Chief Jake Siken, Fire Fighting Instruction Supervisor, 49 South 1st Street, Phoenix, Ariz.

Nov. 2-3—**International Rescue and First Aid Association.** Annual meeting, Toledo, Ohio. For information, write Max Spray, 201 South Washington Street, Alexandria, Va.

November 11—**Great Lakes Division, International Association of Fire Chiefs.** Annual meeting, Hotel Alcazar, Miami, Fla. Secretary-Treasurer, Chief Elmer Stough, 605—4th Street, Lorain, Ohio.

Nov. 12-16—**International Association of Fire Chiefs.** Annual meeting, Miami, Fla. Secretary-Manager, B. Richter Townsend, Hotel Martinique, Broadway at 32nd Street, New York 1, N. Y.

New Fire Station for Needles, Calif.

Volunteer firemen of Needles, Calif. are building a $35,000 fire station in a program to modernize that city's department.

A new triple is on order for the city on the Eastern border of the state. A community of 7800 persons, Needles is virtually isolated from aid because of its location. —CLIFF DEKTAR

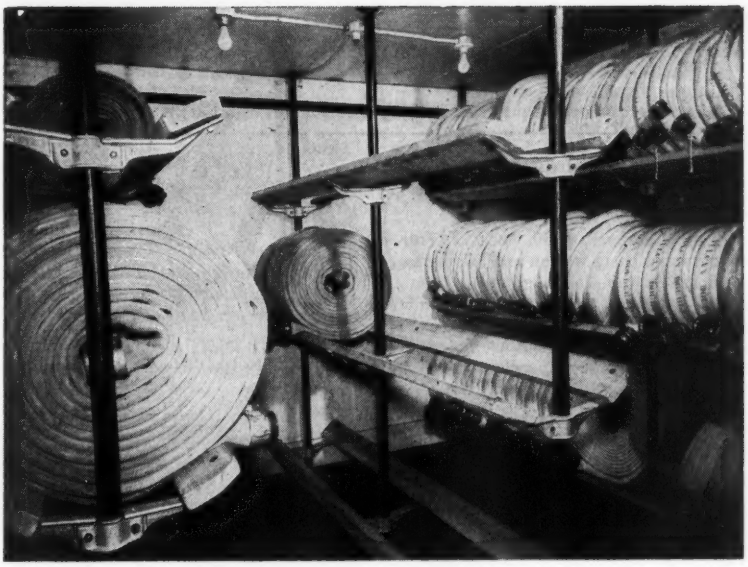
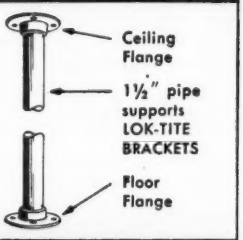


Photo Courtesy Wichita Fire Station No. 1

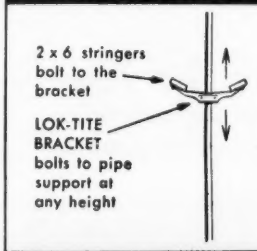
The Solution to Hose Storage Problems

FEATURES

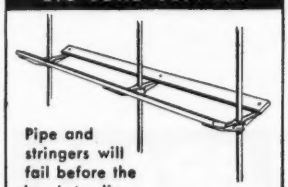
SIMPLE INSTALLATION



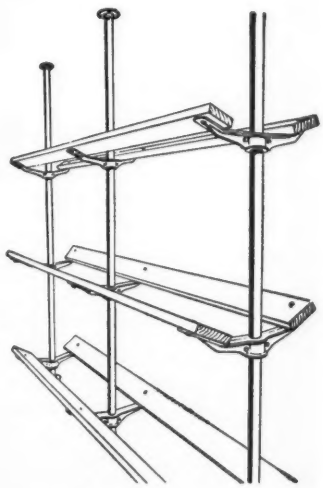
EASY ADJUSTMENT



BIG LOAD SUPPORT



Build Your Own Racks With Lok-Tite Brackets



MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

$3.65 F.O.B. Wichita

W-B MANUFACTURING COMPANY

157 NORTH WACO STREET WICHITA, KANSAS

Questions and Answers

wherein are answered questions relating to current problems in the fire protection

Relay Layout

To the Editor:

In the February, 1956, issue of FIRE ENGINEERING there was an article about a brush fire in the Los Angeles area and, in the article, it stated that a 2.1-mile relay was in operation. There are some points of the operation that are not clear to me, and I would appreciate your explaining them to me. The statement I question is as follows: "Two 2½-inch lines were laid for approximately the first half-mile. We used a Gleason valve as we ran two lines back into the first three pumps." Up to now the longest relay that I have observed has been approximately 3,000 feet. J. C. R.

Answer: Two lines of hose were stretched from the first pumper, these lines being each approximately a half mile in length. From Engine No. 6, two lines approximately 1,000 feet long, were stretched to Engine No 39; from Engine No. 39 to Engine 81 two parallel lines were also stretched, each being approximately 1,000 feet; from Engine 81 to 74, two parallel lines were stretched, also each approximately 1,000 feet in length; from Engine 74 to Engine 83; from Engine 83 to Engine 29; from Engine 29 to Engine 73; from Engine 73 to Engine 18; from Engine 18 to Engine 35, single lines were stretched, each being approximately 1,000 feet in length. From Engine No. 35 a single line 2,000 feet in length was stretched to Hose Wagon No. 35, from which four small lines were taken.

The various stretches added together give 12,640 feet. Actually, the stretches between the various engine companies were not exactly 1,000 feet, but approximately that, due to the fact that the engines had to be placed at points where they would not interrupt movement of apparatus on the highway. Some were shorter and some were a little longer than 1,000 feet.

However, the total layout amounted to 2.1 miles.

Five Classes of Combustion

***Question:* Some time ago I heard a lecturer on fire prevention mention the "five classes of combustibility." I believe that is the way he expressed it. I have tried to find out what he meant without any success. I am writing you to ask if you can give me any information on the subject. S. W. W.**

Answer: We cannot give the exact authority, but about a quarter of a century ago, a speaker, we believe, at a convention of the International Association of Fire Chiefs, described the five classes of combustion somewhat in this order: slow combustion or burning, moderate burning, free burning, flash burning and intense burning.

These apparently were merely arbitrary classifications set forth to identify and describe the different degrees of speed of burning or combustion. They are rarely used today.

The speaker defined the five classifications about like this:

Slow burning—Burning of materials slow to oxidize, or which are protected in some way against fire such as metal-covered wood doors, etc.

Moderate burning—Fire in heavy mill construction and other materials which burn at comparatively slow rate.

Free burning — Burning of readily combustible materials such as paper, excelsior, finely divided woods, etc.

Flash burning—Burning involving materials such as vaporizing fuels, oils, gasoline, etc.

Intense burning (or explosive burning)—Burning such as is encountered in the presence of pure oxygen or any number of modern chemicals.

Certain foreign authorities such as Dr. Von Schwartz (circa 1918) defined com-

POWHATAN

LEADER LINE TWO-WAY SIAMESE

Quarter-Turn

PLATE 175

Plate 175. Male outlets—¾", 1", 1¼" or 2". Female swivel inlet—1½", 2" or 2½". Pin Lug or sensible lug swivel. Rough body, painted red with polished bronze or chromium plated trim.

IF YOU DO NOT HAVE ONE, SEND FOR OUR NEW CATALOG "A" TODAY.

POWHATAN BRASS and IRON WORKS

RANSON, WEST VIRGINIA

Phones 93 & 94 Charles Town West Virginia

Established 1892

bustion thusly: (*Combustion, in the chemical sense, is accompanied by one of three phenomena: (1) by flame (flaming combustion); (2) by incandescence without flame (glowing combustion) or (3) by an absence of either flame or incandescence (non-luminous combustion, slow combustion*). This author used the color scale to classify certain types of combustion.

New England Chiefs Plan Progressive Program

An outstanding program of professional interest has been completed by the Topics and Speakers Committee, Chief Joseph E. Scanlon, Lynn, Mass., chairman, for the 34th annual conference of the New England Association of Fire Chiefs to be held June 25 through 28 at Wentworth-By-the-Sea, Portsmouth, New Hampshire.

Highlighting the events will be a demonstration at the new Air Force Base, Newington, N. H., on Monday afternoon, June 25th. Technical subjects will be handled by panels and round table discussions under moderators Chief Roi B. Woolley, Editor, FIRE ENGINEERING and Technical Consultant, New England Association and Percy C. Charnock, Manager, New England Fire Insurance Rating Association.

Nationally known persons scheduled to participate include: Chief Henry G. Thomas, Hartford, Conn., Vice President NFPA; George L. Swan, Assistant Chief Engineer, National Board of Fire Underwriters; Deputy Fire Commissioner and Chief of Department George E. Hink, Philadelphia, Pa.; Paul R. Lyons, Associate editor, *Firemen*, NFPA; John C. Adams, Jr., Hydraulic Engineer; Brig. General John J. Maginnis, Civil Defense Director, State of Massachusetts; and Frank Soracco, Regional Public Safety Officer, Federal Civil Defense Administration.

Crackdown on Fireworks

Notwithstanding the laws in most states and municipalities prohibiting shooting of fire works and their sale, they still continue to take their toll of victims and property.

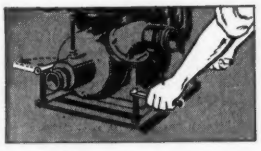
Among the cities that put forth extra effort in the months before July to curb the evil is New York. Early in June, the members of the police and fire departments were ordered to have their eyes, and summons books, open for New Yorkers of all ages who sell, store, discharge or witness the explosion of fireworks.

These measures are being enforced in that city:

Stores where fireworks are likely to be stored or sold will be questioned and the seller or donor arrested.

Adults and juveniles who observe children shooting fireworks and do nothing about it, will be subject to "appropriate action."

Parents will be warned when small children are seized with fireworks.



TRULY PORTABLE. All models come equipped with carrying handles for two-man carry. Weight varies from 160 to 166 lbs. Picture shows handles in carrying position.

Fast action is urgent, when fire strikes. And when the water source is hard to reach, there's nothing more useful to carry on your truck than a Gorman-Rupp Dual Fire Fighter.

In a bare half-minute, water starts flowing through the lines. It can supply water to the truck pumper sufficient to operate two ½-inch nozzles at 100 pounds, or pump directly to the fire.

Gorman-Rupp Fire Fighter Pumps are backed by a positive plain-language guarantee. Ask your distributor for Bulletin 9-FD-11 or write direct.

Model 61½A-23FB	50 GPM @ 110 lbs.
Model 6201 FF	100 GPM @ 80 lbs.
Model 6301 FF	210 GPM @ 40 lbs.

Gorman-Rupp PUMPS

The Gorman-Rupp Company

305 BOWMAN ST. • MANSFIELD, OHIO

WATER when and where you want it!

with **HARODIKES**

Portable Canvas Water Tanks

ON THE JOB - ON THE SPOT
KEEPING AMERICA GREEN

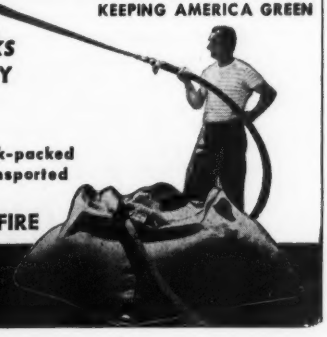
THE ECONOMICAL AND EFFICIENT WAY TO CARRY AND STORE WATER.

EXCLUSIVE FEATURES

- Self Supporting
- Ideal for Relay Pumping
- Easily Back-packed
- Easily Transported

Available in 150 & 300 gallon sizes

A WATER SUPPLY AT THE SCENE OF THE FIRE



Write TODAY for Full Information and Price List

HARODIKES INCORPORATED
NORTH DIGHTON, MASSACHUSETTS

Persons in the News

Mulligan Retires; Deise Chief at Sacramento

Terence Mulligan, colorful and popular fire chief of the Sacramento, Cal., Fire Department since 1941, retired from active service last month. He is succeeded by Thomas A. Deise, a veteran of 24 years service with the department.

Chief Mulligan, who is 70, left on terminal leave May 1, after 44 years with the department. He was appointed call man on June 24, 1912 and became a regular fireman in 1913. He was made acting captain in November, 1914; engineer in December, 1920; acting assistant chief in August, 1921; permanent captain in January, 1923; assistant chief two years later and chief on December 1, 1941.

Chief Mulligan has long been active in the Pacific Coast Inter-Mountain Association and the International Association of Fire Chiefs.

The new head of the department has been a battalion chief since 1942 and head of the department's Bureau of Fire Prevention. He became a captain through competitive civil service examination in 1938. His brother, Battalion Chief Clarence W. Deise, has been transferred to head the Bureau of Fire Prevention.

Also moved up were Battalion Chief Peter F. Mangan, Jr., who was named assistant chief and Captains Hobart Humphrey and Curtis E. Ripley who were advanced to battalion chiefs.

J. H. Clements Chief, Arlington County Fire Department

Joseph H. Clements has been appointed fire chief succeeding Chief Albert M. Scheffel who retired on January 11, 1956. A veteran of 28 years service, Chief Clements served the past three years as assistant chief. Battalion Chief James I. Smith, a veteran of 21 years service, was promoted to assistant chief.

Fire Chaplains Appointed

Three chaplains have been appointed to the Lorain, Ohio, Fire Department, it has been announced by Chief Elmer Stough. These include Father Vincent O'Dea, Rabbi Samuel Myers and the Reverend Walter Ralph.

Norbert Lehman Fire Instructor at Purdue

Norbert Lehman, formerly a fire captain in the Syracuse, N. Y., Fire Department has been appointed fire training instructor at Purdue University, Professor Shelby Gallien, director of the Public Safety Institute, has announced. He succeeds Francis Hartman, who resigned last September.

Mr. Lehman will work with fire departments, arson investigators and others throughout the state in connection with the university's fire training program, conducted with the cooperation of the Indiana Rating Bureau and the State Fire Marshal's Office.

A native of Syracuse, Mr. Lehman attended high school there and Wyoming Seminary at Wilkes-Barre, Pa. He graduated from Syracuse University with a B.S. degree in business education.

He joined the Syracuse Fire Department in 1942 and served until his appointment to the Purdue staff except for three years in the Navy. From 1943-46, he was instructor in Navy fire fighter schools in various parts of the country, where he taught Navy personnel the theory and practical aspects of handling gasoline and oil fires.

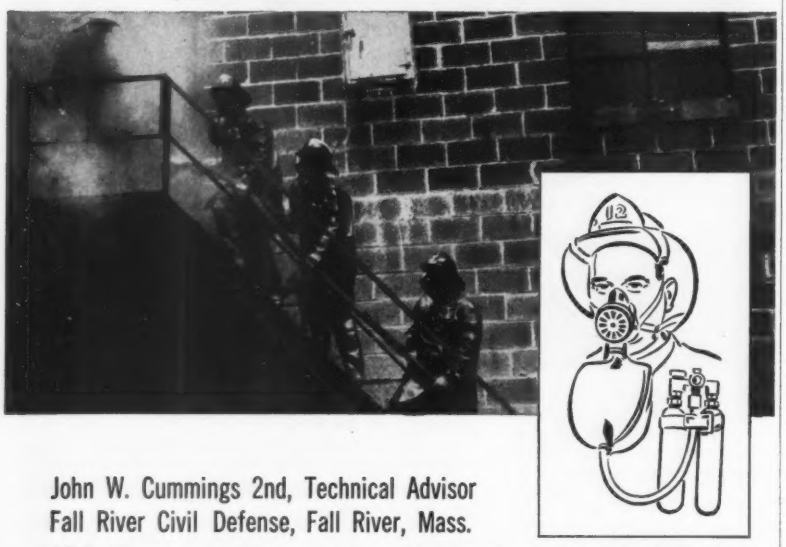
He became a first lieutenant in the Syracuse Fire Department in 1947, and in 1949, was made a captain. He taught part time in Syracuse high schools for three years.

S. F. Morse Chief at Billings, Mont.

Sidney F. Morse, first assistant chief for the past nine years has been named Chief of the Billings, Mont., Fire Department.

A veteran of 19 years service, the new

Civil Defense official praises life-saving *Pocketaire* breathing apparatus



John W. Cummings 2nd, Technical Advisor
Fall River Civil Defense, Fall River, Mass.

says: "Your masks have made possible seven rescues and a number of reconnaissance and ventilation tasks in heavy smoke and sulphur dioxide. Lawyers, judges and juries seem to value a life at $7500. Seven lives at $7500, $52,500, a handsome return on the price of two masks.

Fall River Civil Defense bought three masks in 1954 and six in 1955. These masks are in service in the Fire Department. It intends to purchase a substantial number more.

It has been interesting to note that in smoky fires, when unprotected men have been knocked out or reduced to copious tears, men wearing "Pocketaire", without goggles, have experienced little or no lachrymation and *no after effects.*"

Seconds count when human life is at stake, and Pocketaire is on the man and in action in only seven seconds. A compact, lightweight unit, it is unequalled for speed of operation and complete breathing protection. Its high standards bring together all the essentials of a practical, self-contained breathing apparatus — light weight, small size, low cost (from $100 up), inexpensive refills, and absolute safety.

Write for free literature or demonstration

THE **CYCLE-FLO** COMPANY
984 BRIDGEPORT AVENUE • MILFORD, CONN.
Canada: Wilson & Cousins Co., Toronto, Ontario
Export: Ward LaFrance International, Elmira, N. Y.

chief succeeds Lucian B. Smith who retired after heading the department for 13 years.

Chief Morse was appointed to the department in 1937 and was promoted to captain in 1943. He served with the Seabees during World War II in the South Pacific area. For the past 10 years he has been an instructor in the U. S. Naval Reserve program with the rank of Chief Firefighter.

Chief Smith will be associated with the Billings Elks Lodge as secretary. The veteran fire fighter had over 20 years service with the Billings department.

Trebles in Brass!

Jack Maynard, Chief of the Chardon, Ohio, Fire Department, and president of the County Firemen's Association and a long time correspondent of FIRE ENGINEERING, has been named Superintendent of Streets, Sewer and Water Departments of that Village.

Los Angeles Promotions

A number of promotions necessitated by retirement of Chief John H. Alderson and Deputy Chief Frank H. Rothermel of the Los Angeles City Fire Department were announced by new Chief Engineer William L. Miller.

Promoted to assistant chief rank were Battalion Chiefs Don T. Hibbard and Bethel F. Gifford, and to battalion chief rating, Captains Harry E. Pitts and Oliver H. Howard.

Chief Hibbard was assigned to Division 4, San Fernando Valley, and Chief Gifford remains in charge of the shops and supply units of the department.

In addition, Battalion Chief Raymond Hill, was assigned as Fire Prevention Engineer, replacing Chief Miller.

Frank E. Winkler continues as acting deputy chief until an examination can be held to fill the position, and Assistant Chief Marvin Meador is filling Winkler's spot as Headquarters Assistant Chief.

Cliff Dektar

Obituaries

Chief R. P. Dey

R. P. Dey, 72, chief of the Pembroke, Ont., Fire Department died on March 14, 1956. Chief Dey commanded the Pembroke Department for 33 years. He held the Humane Society's King's Medal for life saving and the Dow Award for bravery. He was a past president of the Canadian Fire Chiefs Association.

Paul V. Betters

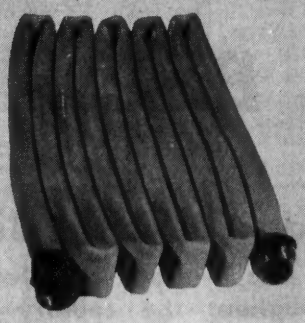
Paul V. Betters, expert on municipal government matters, died May 14 at his home in Silver Spring, Md. He was fifty and, since 1932, had been Executive Director of the U. S. Conference of Mayors.

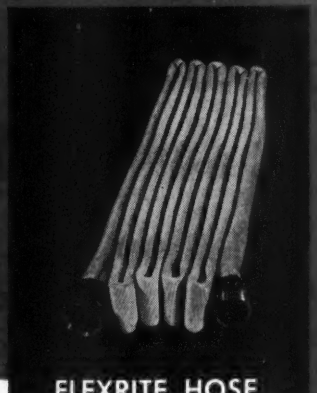
More FLEXIBLE COMPACT DURABLE Than

NOW with SEALCOTT "W" . . . Hamilton's new effective fire hose protection against destructive mildew and rot.

HAMILTON Flexrite FIRE HOSE

CONVENTIONAL HOSE





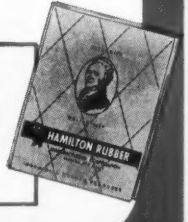
FLEXRITE HOSE

Flexrite, made with Dacron* chemically-produced polyester fiber filler cords, folds tighter, rolls closer and is 20% lighter.

*DuPont trademark

A reputation for integrity such as ours is not easily gained. Since 1870, our customers have continuously praised the reliability of our products . . . a reliability which has been attained only by obtaining quality from our Technical and Manufacturing departments at all times.

Write for the new 1956 catalog on our complete line of fire fighting hose for every municipal, industrial and forestry requirement.



Distributor Inquiries Invited

BE SURE . . . USE HAMILTON . . . ALWAYS DEPENDABLE!

HAMILTON RUBBER MANUFACTURING CORPORATION

OVER 85 YEARS OF SERVICE TO INDUSTRY

Executive Office and Factories, 1055 Meade St., Trenton 3, N.J.

BRANCHES IN: CLEVELAND • HOUSTON INDIANAPOLIS • LOS ANGELES • NEW YORK PITTSBURGH • SAN FRANCISCO

PENNSYLVANIA FIRE

Continued from page 489

Shortly after this, Cumberland County CD Director Dale Murphy, and auxiliary police arrived. They organized first-aid teams, brought in a doctor and two nurses, and set up a system for supplying gasoline to the committed pumpers. In the next 48 hours, more than 550 gallons of fuel were consumed.

From the beginning, firemen were not seriously hampered by crowds. Fire police units blocked both highways into the town, a mile away, and state police arrested parking violators beyond this fire line area.

Ladies of Grantham, with members of various ladies auxiliaries of aiding companies, organized a soup, sandwich and coffee service by 5:30 p.m. and they continued to carry food to firemen throughout the operation.

The battle waged back and forth all night. By dark, Chief Keefer was concentrating hose lines in the front area of the factory shell, in an effort to save what they could of the records in the office. Many smaller magnesium and solvent explosions occurred at intervals.

Two companies centered streams on a 2,000-gallon oil tank adjacent to the rear wall, and succeeded in keeping it intact. Another company directed all its efforts toward preventing involvement of a 500-gallon gasoline tank adjacent to the east wall. Three days later, firemen were able to pump out the flammable contents of these tanks and refill them with water.

At various times sections of the brick wall fell, both inward and outward, keeping the fire fighters at bay. The first-story walls were poured concrete, which helped contain the heat, but the second-story walls above the concrete were brick, which collapsed.

At 10 p.m. crews pouring water into the office struck a storage pit of magnesium casings that had ignited right inside the front wall. Another major explosion ripped upward and outward, upsetting another large section of the wall.

Foam was tried in an effort to lay the white hot flashes but with little success. Finally, truckloads of sand were ordered and firemen, pushing in close to the wall under cover of hose streams, shoveled tons of the sand through a burned-out window into the pit.

Plant manager Ralph McKay said this attempt to control the magnesium fire was successful, and the following morning firemen were able to enter the area to begin salvaging office records. Mr. McKay said about 40 per cent of the company's records in steel filing cabinets were salvageable, and a good percentage of the technical volumes were water-soaked, but usable. However, only 10 per cent of the card file system was saved.

Shortly after 2 a.m. Sunday, another magnesium explosion ripped the center of the molten debris, but was too deep in the heart of the burned-out shell to be little more than spectacular and firemen were not too concerned with it.

Flareup necessitates recall

By dawn, all but six companies were released by Chief Keefer. Shortly after 8 a.m. Sunday morning, however, three more trucks were called in from Lemoyne, Dillsburg and Lewisberry when a flareup in the rear of the gutted structure again threatened the oil tank there.

By midafternoon Sunday, firemen were able to perch on sills of burned-out windows and pour heavy streams on the smouldering mass at close quarters, although two more minor explosions backed them out shortly after suppertime.

Franklintown relieved Lower Allen Township at dusk on Sunday, and five companies remained on duty until Monday morning. Grantham remained until Tuesday, and was recalled a short time Wednesday afternoon, before the largest fire ever experienced by firemen of Central Pennsylvania was finally quelled.

Batteries of searchlights were used both nights to light the fireground. During a thunder storm Saturday night, a second Dillsburg company which was on standby and the Williams Grove Company were dispatched to Bowmansdale, two miles eastward, when lightning struck a huge pine tree.

Plant Manager McKay said, if based on an estimate of original acquisition costs of the airplane parts when procured by the government, the loss would have

DON'T ORDER

SAFETY BELTS

BY ACCIDENT

Chief—

Why not give your men the protection they deserve? Only the best is good enough!

Diamond <S> Safety Belts

are now in use in many Fire Departments throughout the country—because—

- Diamond <S> has government designed quick release buckle same as used by U. S. Army on securing belts
- Buckle cannot be opened accidentally—is secure at all times. Yet on and off in seconds. Treated for outdoor use
- Simplified design of all fittings—easy to install
- Two inch width heavy nylon web treated for outdoor use. No roping—no cutting—as caused by wider or narrow webs
- No adjustment necessary. No adjusting slides. Will fit all your men regardless of size
- Has phenol impregnated tip (no metal) as required by U. S. Government and Cornell Aeronautical Lab. and most essential for fire apparatus
- You can depend on Diamond <S> it will do the job—it has no equal—All parts of the Diamond <S> are made according to rigid specifications—Over 20 years of manufacturing experience
- Your men will be secure, cannot be thrown from apparatus. They deserve the best—ask the chief who has them. It's Diamond <S> all the way—also available on Mack—American LaFrance—Ward LaFrance apparatus

Comm. John J. Tubridy and Director Lawrence A. Whipple of Dept. of Safety, Jersey City, N. J. are among the many fire officials approving DIAMOND <S> SAFETY BELTS. Photo shows Director Whipple adjusting belt on Fireman Halleran of J.C.F. Dept.

In use in N.Y.F.D. and many others throughout the country

Call your dealer or write direct—lives may depend on it

Diamond <S> Belts are available for Police Cars—school buses—trucks—ambulances—private cars, etc.

Manufactured by—

SERVICE BELT CO., INC.

810 BROADWAY, NEW YORK 3, NEW YORK

been nearly $10 million. However, much of this was purchased by the company as government surplus. At present market values, deducting the estimated scrap prices of the salvageable metal such as steel, aluminum and more than half a ton of silver, the loss to building and contents would still run well over $3 million.

The company dealt primarily in replacement parts for all motor-driven aircraft, but specialized in parts for Pratt-Whitney engines. It overhauled worn units, assembled parts and did all similar work short of complete engine rebuilding. All contracts were with commercial air lines. This firm held no government contracts at the time.

The home office is in New York City and a branch office is in Miami. Two other branches in Washington, D. C., and Paris, France, were closed recently when the corporation owner died.

Warehouse facilities formerly located in Jersey City and Brooklyn, N. Y., and an engine rebuilding factory in Charlotte, N. C., were recently incorporated with the Grantham plant.

Chief Keefer credited the escape of plant employes without injury to the frequent fire drills firemen held with the workers. Commenting on the fire, he also stated that he and all his assistant fire chiefs had thoroughly familiarized themselves with the interior of the plant although, in this case, the knowledge proved of little value due to the rapid spread of the flames.

A loading shed 15 feet from the west wall was saved by setting up fog curtains. The roof of this one-and-a-half-story structure furnished a vantage point from which firemen were able to pour water into the factory building in the later stages of the fire.

Following the fire, firemen turned over the Grantham firehouse to factory officials as a temporary office and warehouse. They also installed a telephone for the use of the company. The two local pieces of fire apparatus have been temporarily quartered elsewhere.

TRAINING

Continued from page 492

board and administrator assist in the organization of new departments; aid in the development of rural water supplies and in improved fire department communications; publish a bulletin for the fire service and make studies on fire and safety problems, such as farm identification and disaster planning.

Costs are to be carried by a biennial State appropriation of approximately $100,000, and a contribution to be set by the training board from the benefited municipalities and corporations.

Our Wisconsin citizens, particularly those in the smaller cities, villages and rural areas, have a substantial stake in the enactment of this bill. These civic-minded men in the local fire department, already possessing rescue and safety equipment, are the first summoned for help, not only for fire but for floods, tornadoes, war bombing, downed aircraft and traffic wrecks. *Norton T. Ames*

PLECTRON

Fyrcall

High Frequency Radio Receiver

THE NEW MODERN WAY TO ALERT FIREMEN

PLACE A Fyrcall RECEIVER IN EACH FIREMAN'S HOME

CRYSTAL CONTROLLED

TONE OPERATED

Use the *Fyrcall* to—

Alert Volunteers
Send men directly to fire
Call first-aid squad
Notify off-duty paid men
Give silent alarm
Solve traffic problems
Announce meetings

- Receives from police or fire department two-way radio base stations.
- Receives ONLY those transmissions preceded by a 1000 cycle tone.
- Built to order for your frequency in the 25-50 megacycle band.
- Crystal controlled on frequency. Stable, dependable, no drift.
- Speaker is turned on automatically by a 1000 cycle tone transmitted from the base station.
- Speaker turns off automatically soon after the message is received.
- Dependable range is at least 2 miles from a 60 watt base station.
- 117 volts AC-DC, 21 watts.
- No outside antenna required.
- Terminals on rear for remote speaker.
- Attractive plastic cabinet 6¾" x 6" x 11⅛".
- Low cost. Less than $50.00 per unit.

For complete information please write to:

PLECTRON CORPORATION, Overton, Nebr.

For VALUE . . .

Specify HALE

Why do users of Hale Fire Pumps specify "Hale Pump" when they buy new apparatus?

Because these men have learned through practical experience HALE VALUE in terms of:

• **Dependability** • **Flexible Performance** • **Efficiency**

For 41 years Hale-equipped Fire Pumpers have upheld a high standard of dependability . . . a dependability that has won the respect of users all over the world. **Hale Fire Pumps are sold only through Manufacturers of Quality Apparatus.**

FEATURES

- Completely Modern
- Reliable
- Rugged
- Compact
- Conservatively Rated

Write today for NEW FOLDERS on Hale Fire Pumps . . . built in all standard capacities.

HALE

FIRE PUMP COMPANY

CONSHOHOCKEN, PA.

Half of N. Y. Firemen Hold Other Jobs

In an effort to gather more basic information on the moot question of fire fighters holding outside jobs, New York's Fire Commissioner, Edward F. Cavanagh, Jr., recently sent questionnaires to the entire fire force of over 11,000 men. The Commissioner, who has championed salary increases for his men and has shown sympathy with those who hold down jobs "on the side," sought to determine what types of such jobs were being filled, and which jobs might be classed as "proper," i.e., that would not interfere with a man performing efficient fire duty.

The survey of part-time occupations disclosed the interesting fact that 5,159 firemen engage in 516 different kinds of non-fire fighting work.

One of New York's 11,600 firemen, reportedly questioned in his off hours is a mortician; one is a clam digger, one a song writer. Ten are butchers and one is a candlestick maker.

Perhaps the most unique occupation reported is that of "liquor picker." This reply brought raised eyebrows to some of the researchers. According to an aide, the Commissioner suspected that the fireman samples liquor, as a tea-taster tastes tea, but feared that to write "liquor-taster" would look bad. The fireman himself, interrogated by reporters, said he picked liquor out of a stock downstairs, and toted it upstairs where it was served.

Commissioner Cavanagh expects to promulgate regulations regulating "certain types of occupations in which firemen may not engage, principally because there is a possibility that these occupations might compromise the member of the department, or bring discredit upon the department, or, further, may in some way impair his efficiency in the discharge of his responsibility in the department."

It is said that, presumably, the fireman who spends his spare time working as a butler will be permitted to continue—as no doubt will the six who are caterers, the nine who are chiropractors, one who directs funerals, three who are opticians and one who is a dentist.

Commissioner Cavanagh said that the reports were gratifying in that they "indicated the serious pursuits and endeavors of those . . . who must ask funds in addition to their salaries for one reason or another, but chiefly to keep their homes and families going."

Presently, New York City firemen start at $4,000 a year, reaching $5,315 a year in three years. Officer pay ranges from $6,360 for lieutenants to $8,345 for battalion chiefs. Tours of duty are so spaced that they have intervals of 48 and 72 hours off. They also are permitted to swap hours, and to sleep during night tours when there is no work to do.

A campaign is now on to raise the city firemen's base pay, to $7,000.

take light... power

... anywhere quickly with

Fairbanks-Morse portable generators!

This 2500-watt AC "grab-it-and-run" generator is the one piece of equipment every fire department needs . . . for illuminating dangerous fire areas, for lighting highway accidents; for power tools and other equipment used on rescue trucks; flood-lighting water rescues and many similar emergencies. This F-M set is ideal for suburban and rural departments which are frequently called upon for service away from high lines. Available in three sizes: 600, 1000 and 2500 watts; manual starting; 115 v., single phase, 60 cycle; 3600 rpm. Net weights: 78, 86 and 138 lb., respectively. For complete information write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE

a name worth remembering when you want the BEST

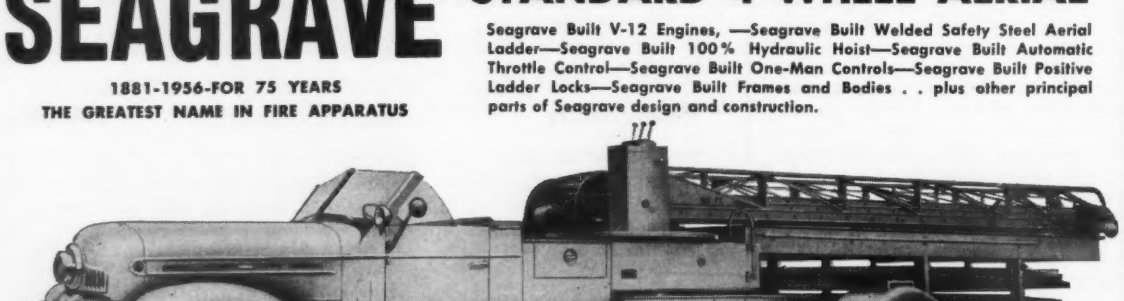
WATER SYSTEMS • GENERATING SETS • MOWERS • MAGNETOS
PUMPS • MOTORS • SCALES • DIESEL LOCOMOTIVES AND ENGINES

SEAGRAVE

1881-1956-FOR 75 YEARS
THE GREATEST NAME IN FIRE APPARATUS

STANDARD 4-WHEEL AERIAL

Seagrave Built V-12 Engines, —Seagrave Built Welded Safety Steel Aerial Ladder—Seagrave Built 100% Hydraulic Hoist—Seagrave Built Automatic Throttle Control—Seagrave Built One-Man Controls—Seagrave Built Positive Ladder Locks—Seagrave Built Frames and Bodies . . plus other principal parts of Seagrave design and construction.



The Seagrave Corporation—Columbus, Ohio

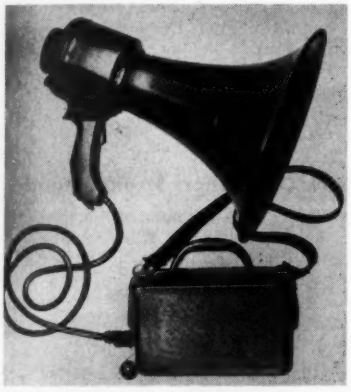
NEWS OF THE MANUFACTURERS

Continued from page 504

9-volt battery; 8-inch inside alarm; 10-inch outside gong in weatherproof cabinet; eight combination rate-of-rise and fixed temperature U. L. approved detectors.

For complete details and prices on this packaged system, write directly to Sales Manager, Fire-Lite Alarm Systems, Inc., New Haven 2, Conn.

New Powerful Portable Megaphone



A new, heavy-duty portable megaphone, called Audio Chief, has been announced by Audio Equipment Co., Inc., Great Neck, N. Y., as a super-powerful version of their self-contained Audio Hailer.

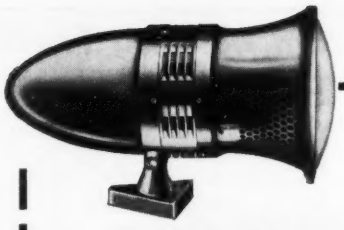
Like Hailer, the "Chief" operates on dry batteries, and incorporates the same patented "anti-feedback" design. Batteries and electronic amplifier are housed in a separate, water-tight case, connected by flexible cable to the megaphone unit. In acoustic output and range, the Chief delivers more than twice the power of Hailer, and is intended to overcome severe adverse conditions in fire and police work, civil defense, oil fields, forestry, plane-to-ground communication, etc.

Full details of both Chief and Hailer are available from Audio Equipment Co., Inc., 805 Middle Neck Road, Great Neck, New York.

Indian Pump Still Serviceable After 31 Years

Neil Le May, Chief Forest Ranger, Wisconsin Conservation Department boasts an Indian fire pump which has seen 31 years hard service and is still fit for fire fighting. It is being retired now because of inadequacy in size rather than unserviceability.

According to the manufacturer, D. B. Smith & Co. of Utica, N. Y., such long service is not unusual. The Maple Springs, N. Y., Fire Department, for instance, has Indian pumps still on the job



MODEL 20 SIRENLITE
for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

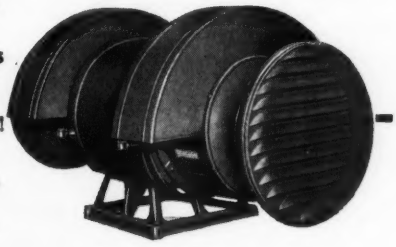
STERLING SIRENS

- HANDSOME
- RUGGED
- RELIABLE

Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

MODEL 20 SIRENLITE FIRE ALARM SIREN
for Volunteer Systems

Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.



Complete line of Siren Equipment • *Bulletin on Request*

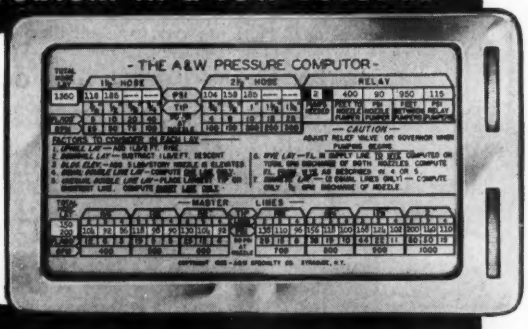
THE STERLING SIREN FIRE ALARM CO., INC.
10 BARTLETT ST., ROCHESTER 8, N. Y.

A turn of the dial solves any pump pressure problem in a few seconds

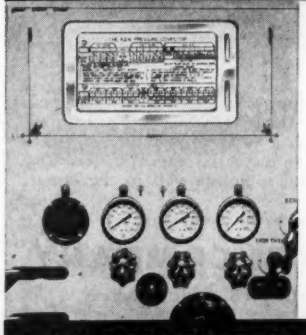
PUTS EFFECTIVE STREAMS ON THE FIRE FASTER

•

PAYS FOR ITSELF BY CUTTING PUMP, GAUGE and HOSE DAMAGE



The A & W PRESSURE COMPUTOR



If you know your hose lay and tip size, the pumper-mounted A & W Computor gives you exact pump pressure in seconds, without loss of time or water. Computes for hand lines, master stream appliances, relays. Reduces personnel injuries due to ruptured hose.

Mounts quickly and easily on any pumper

Face size only 6" x 11". No connections except for lighting. Trouble-free, built to last. Chrome plated, water sealed.

Distributed in United States and Canada by American LaFrance Corporation

A & W SPECIALTY CO., Dept. FA, 3717 Midland Ave., Syracuse 7, N.Y.

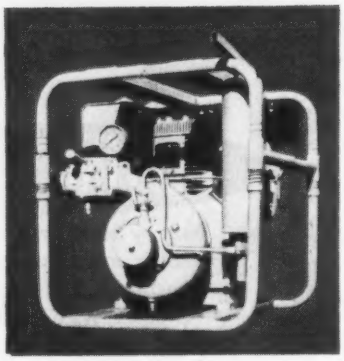
Fight Brush Fires From Moving Truck with a Hale Type FZZ PORTABLE PUMPING UNIT!

Picture below shows fire-fighter handling stream from a Hale Type FZZ Portable Pumping Unit mounted on a moving truck. An FZZ can be mounted permanently on truck or carried as a portable unit for pumping into or *from* booster tank. This portable arrangement is extremely useful both for fighting brush, field or forest fires while in motion; or for pumping from pond, stream or well direct.

An FZZ will supply from draft 2 capable fire streams thru 1½" lines. Performance substantially exceeds NBFU and NFPA capacity and pressure requirements.

A frame-mounted FZZ (with carrying handles turned in) is pictured at right. Also available mounted on two wheels or on rubber-cushioned steel channels. Note: Discharge Adapter can be supplied for use with 2½-inch hose.

**Write today for new FZZ Folder.*
Let us know if you want a demonstration.



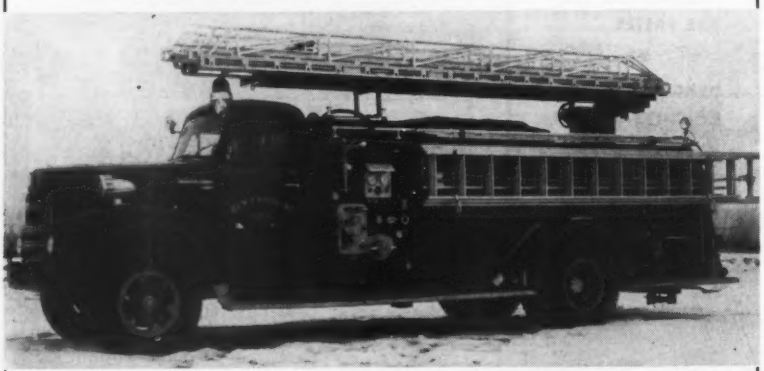
HALE FIRE PUMP CO.
Conshohocken, Pa.
Fire Pumps in All Standard Capacities

Nip Brush Fires in the Bud with a HALE FZZ

MEMCO AERIAL LADDER

Products have to be good when you sell them to a close neighbor, and by the same token—they must be good when you sell them to customers in far distant lands.

THE MEMCO AERIAL LADDER *is* A GOOD PRODUCT



The apparatus shown above was built by the Howe Fire Apparatus Company, Anderson, Indiana, for their neighbor, the New Haven (Indiana) Fire Department. The aerial incorporated into the apparatus is a 50 ft. MEMCO.
The MEMCO AERIAL LADDER is the solution to the aerial apparatus problem of the department in the smaller community—and it fits in well in the larger department too.

for details—write or telephone

MEMCO AERIAL LADDER COMPANY
1007 N. W. 36th Street, Oklahoma City 18, Oklahoma
Tel. JAckson 5-6603

which were purchased back in 1933 by Chief Everett Hawley, father of the present Chief, Charles Hawley.

The company has a new Indian fire pump catalog which is available on request.

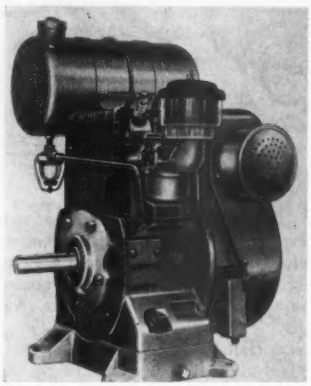
New 360° Flasher

A new type 360-degree flashing light known as the "Busy Bee" has been announced by The Trippe Manufacturing Co., 218 N. Jefferson Street, Chicago 6, Ill.

The light employs a spring mounted bulb which vibrates with the motion of the vehicle, enhancing the flashing effect, although light is provided with an off-and-on flasher in addition. It stands over seven inches high and can be supplied with lenses in red, blue or amber.

For complete details and prices, address the company at the above address.

New Onan Short Stroke Engine



D. W. Onan & Sons Inc., Minneapolis 14, Minn., has announced its Model AJ single cylinder, air-cooled, four-cycle gasoline-powered engine which develops 5.5 hp at 3600 rpm. The unit weighs only 86 pounds, has a 2¾-inch bore, 2½-inch stroke, 14.9 cubic inch piston displacement and a compression ratio of 6.25 to 1.

"Piggy-Back" Generator Installation

The Delco-Remy Div. of General Motors Corp., Anderson, Ind., has announced a "piggy-back" generator installation kit as a low-cost method of obtaining extra electrical power for vehicles where charging at low speed is important.

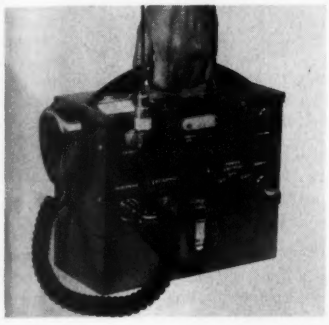
A 6-volt generator can be mounted "piggy-back" with a 12-volt original equipment generator to permit operation of a separate 6-volt system for radios, sirens, flasher-lights, and other emergency units on vehicles equipped with a 12-volt electrical system.

Two 12-volt, or two 6-volt generators can be teamed in the same fashion to

provide more low-speed or idle-speed output for vehicles which do excessive slow-speed driving.

Packaged kits, information and instructions to make the conversion are available through G.M. dealers, and United Motors System outlets.

Portable Transmitter-Receiver



A hand-carried two-way portable radio weighing 11 pounds complete with long-life batteries is announced by Industrial Radio Corp., 428 N. Parkside Avenue, Chicago 44, Ill. The new Model H/M Pak-Fone features loud speaker operation, relay operated squelch system, volume control and an on-off indicator light. A power cable connector is provided for an external power supply. Model UPC-100 operates from 6, 12 and 24-volt storage batteries and 117 volts A.C. Full particulars may be had from the manufacturer.

Heavy Duty Glass Jar Battery Added by U-C Lite

A new addition to the Big Beam emergency light group features a series of five heavy duty, long-lived glass jar batteries. The glass batteries are available in a spread starting at 100 ampere hours and ranging down to 80, 40, 30 and 25 ampere hours.

A new remote mounting light head calculated to increase the utility scope of the emergency lights has also been introduced. A typical application is to mount case and one light in the stairwell on one floor and remote heads in the stairwell on two other floors.

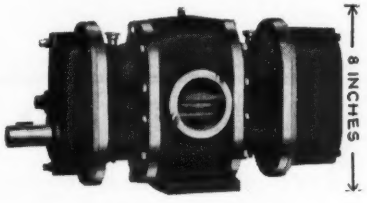
For detailed literature write U-C Lite Manufacturing Company, 1050 West Hubbard Street, Chicago 22, Illinois.

Lear Portable Power Generator

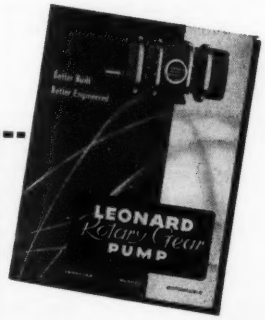
Lear, Inc., LearCal Division, Santa Monica, Cal., has introduced a new line of lightweight auxiliary power units known as the Model 5903 series. It has a self-contained gasoline engine-driven generator to supply either 1350 watts of DC power or 1500 watts of 400 cycle AC power. It weighs less than 35 pounds, is completely contained in a 1.5 cubic foot package and, according to the manufac-

DON'T SPECULATE-
...STEP UP
YOUR EFFICIENCY!
The accelerated tempo of modern times demands modern techniques plus stepped-up efficiency. Fire departments everywhere find the Super Vacuum Smoke Ejector provides the extra margin of efficiency necessary in modern day fire fighting. New and revolutionary in design, Super Vacuum will outperform other fans twice its size... gives the positive, controlled ventilation essential to the prompt, efficient control of fires.
CONTROL VENTILATION
...CONTROL FIRES!
The heart of the SUPER VACUUM Smoke Ejector is the patented propeller. Conventional fans produce a chopping, recirculating action. In contrast, the SUPER VACUUM propeller is a perfect spiral air screw which creates a vacuum... suction is created over the entire face of the propeller and the air or smoke is discharged in a high velocity spiral. There are no dead spots.
THE HEART OF THE SUPER VACUUM
WRITE FOR ADDITIONAL INFORMATION OR CONTACT YOUR LOCAL FIRE EQUIPMENT DEALER
MANUFACTURED BY
Super Vacuum MANUFACTURING CO. INC.
319½ E. 17th Ave., Denver 3, Colorado

Specify
LEONARD
The Better Engineered and Better Built
APPARATUS PUMP



This Booklet Tells How The LEONARD Rotary Gear PUMP



Saves You Money Year After Year, Gives You More Years of Dependable Service; and it Describes . . .

- Complete Specifications
- Performance Graph
- All Construction Features
- Installation Directions
- Operation Instructions
- Diagrams of 4 Models

Write for free illustrated brochure that describes the improved Leonard Pump to:

AMERICAN FIRE EQUIPMENT CO. 717 Boylston Street Boston 16, Mass.

Name_____ Title_____

City_____ Zone_____ State_____

turer, is ideal for supplying power to operate communications equipment on the ground and where standby or auxiliary electric power is required.

It will operate lighter weight, higher speed electric power tools.

For full particulars on this model, address Lear, Inc., LearCal Division, 3171 S. Bundy Drive, Santa Monica, Cal.

E. S. Ruth Chief Engineer of Gamewell

The Gamewell Company of Newton Upper Falls, Massachusetts, has appointed Mr. Edward S. Ruth to the position of Chief Engineer, replacing Mr. Frank R. Bridges, who has resigned. Mr. Ruth joined The Gamewell Company in 1954. He is a Fellow in the American Institute of Electrical Engineers; Chairman of the Technical Committee and Vice Chairman of the Signaling Apparatus section of the National Electrical Manufacturers' Association, and a member of the Signaling Systems and Thermostats Committee of the N.F.P.A.

The Gamewell Engineering Department is designing an expanded line of emergency signaling systems for fire detection and prevention by institutions, industrial plants, shopping centers, public buildings and municipalities.

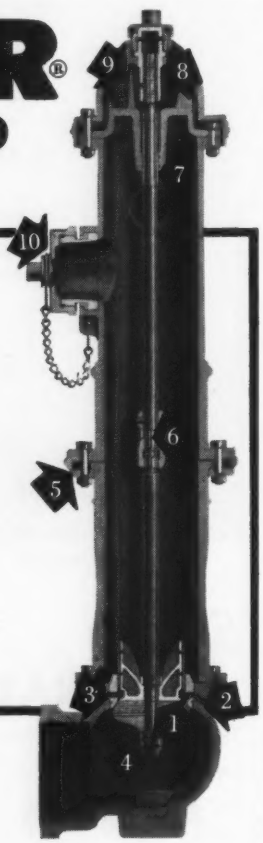
MSA Opens Office in Birmingham

Mine Safety Appliances Co. has opened a new office and warehouse at 2500 - 12th Avenue, North, Birmingham 4, Ala., to better serve customers in Alabama and Western Florida.

Stryker Sectional Aluminum Splint

A comfortable, easy to apply splint is available for emergency treatment of an injured arm or leg. Called the Stryker Emergency Splint, it combines shaped aluminum half sections with built-in padding and traction to completely immobilize the fractured limb. Three web

MUELLER®
AWWA IMPROVED FIRE HYDRANTS



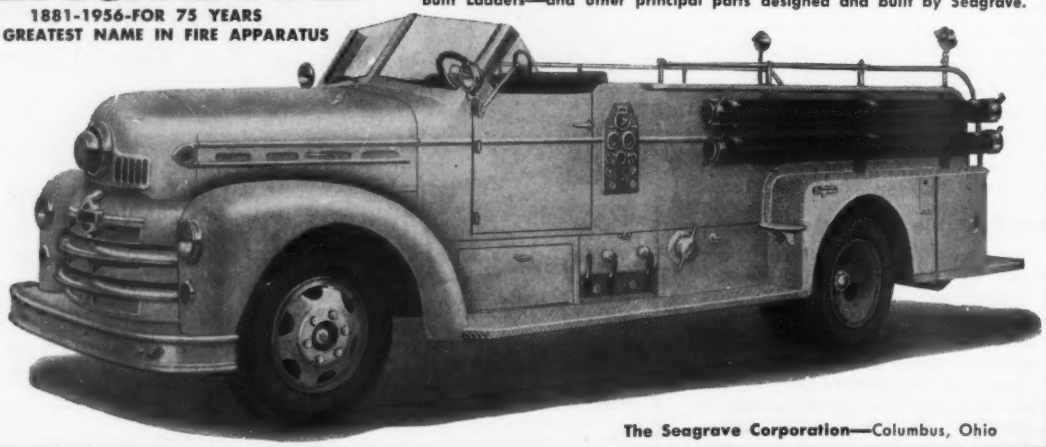
ALWAYS READY!

Mueller Hydrants use compression type main valves (1) that close with water pressure, permit repairs without water shut-off. Double drain valves (2) are part of the main valve and are force-flushed when hydrant is operated. Seat ring (3) and cap nut (4) are non-corrosive bronze. Flange (5) and stem coupling (6) break on impact, eliminating barrel and stem damage. "O"-ring seals (7) around stem are water-tight. Oil reservoir (8) lubricates threads and bearing surfaces. Dry top design (9) keeps water from operating surfaces. Nozzles (10) are breech-locked and calked to stop blowouts. *Mueller Hydrants are* always *ready—for fire emergency. Write for information or contact your Mueller Representative.*

MUELLER CO.
Dependable Since 1857
2501 Chestnut St., CHATTANOOGA, TENNESSEE

SEAGRAVE
1881-1956-FOR 75 YEARS
THE GREATEST NAME IN FIRE APPARATUS

STANDARD PUMPING ENGINE
Seagrave Built V-12 Engines—Seagrave Built All Bronze Centrifugal Pumps —Seagrave Built All Steel Bodies—Seagrave Built Safety Frames—Seagrave Built Ladders—and other principal parts designed and built by Seagrave.



The Seagrave Corporation—Columbus, Ohio

straps tighten snugly, providing moderate, uniform compression which controls bleeding and swelling. X-rays may be taken without removing the splint.

For complete information write Orthopedic Frame Company, 420 Alcott Street, Kalamazoo, Mich.

Motorola Appointments

The promotion of Harold A. Jones to national sales manager of Motorola Communications and Electronics, Inc., has been announced by Daniel E. Noble, vice president. Jones, who joined Motorola in 1946 has been Executive Assistant to the National Sales Manager, Eugene S. Goebel, recently named Vice President for Market Relations.

Motorola has established four geographical sales divisions and appointed several new vice presidents, it is announced. Named Vice Presidents and Sales Division Managers are: Lowell E. White, Eastern Sales Division; Homer L. Marrs, Central Sales Division; Edward L. Falls, Jr., Southern Sales Division and Donald F. Brickley, Western Sales Division.

A. R. Marshall Executive Vice-President of Powhatan

C. F. Reininger, President and General Manager of Powhatan Brass & Iron Works has announced the appointment of Allen R. Marshall as Executive Vice President.

Mr. Marshall started in Powhatan's shipping room in 1941, and except for two years' service with the U. S. Navy, has been with the firm since that time, rising from Shipping Clerk to Assistant Production Manager, then to Production Manager, and last year to Assistant to the President.

Superior Coach Issues Colorful Broadside

A big, attractively illustrated folder, describing its line of ambulances and rescue coaches, has been issued by Superior Coach Corporation, Lima, Ohio.

In addition to picturing and describing the 1956 line of products, the broadside contains standard ambulance specifications for all models.

For your copy address the above company.

WHY *Janesville* IS FIRST

The "DEE-RING and SNAP..."

For nearly 50 years the craftsmen at the Janesville Apparel Company have been designing quality fire fighting apparel. This constant search for quality has led to our development of the riveted "quick-hitch" D-Ring and Snap now common on all fire coats . . . famous for rigidity and strength!

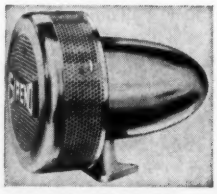
Developed by Janesville . . . for Janesville Quality!

Check the Other Features . . .

- Detachable wool or flannel lining.
- Finest Materials.
- Rugged Construction.
- Custom-built sleeve and coat lengths.

Janesville APPAREL CO.
JANESVILLE, WISCONSIN

SIRENO
(TRADE MARK)



ED-12

THE BIGGEST MOST POWERFUL VEHICLE SIREN MADE

A Style and Size For Every Requirement

NEW—"REVOLVO-RAY"

WATERTIGHT—NEW DESIGN AND CONSTRUCTION FOR GREATER EFFECTIVENESS

The SIRENO COMPANY, Inc.

Dept. 27—214 WILLIAM ST., N. Y. 38, N. Y.

BRAXMAR BADGES

Since 1879

Firemen the world over rely on Braxmar for the finest badges money can buy. We offer the widest possible selection in nickel, chrome plate, sterling silver, gold plate, rolled gold and solid gold; all of our badges and insignia are the work of experts with a lifetime of service.

Write for latest catalog and price list.

Dealer Inquiries Invited.

THE C. G. BRAXMAR CO., INC.

216 East 45th Street

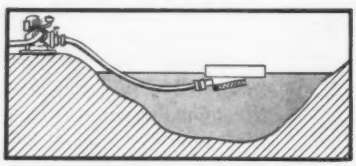
New York 17, New York

FOR CLEAN PUMPING IN DEEP or SHALLOW WATER -- Get a REVOLUTIONARY NEW

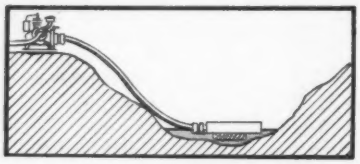
FLOAT-DOCK

IT FLOATS ... above sand and muck--below scum and debris!

No more whirlpools or loss of suction! No more sand and gravel entering your pumps, wearing out impellers, packing, and bearings! Hinged strainer is quickly detached for pumping from vertical water sources such as cisterns, etc. Constructed of heavy, cadmium-plated steel . . . Diagrams below show how FLOAT-DOCK empties a pond.



★ DEEP DRAFT — Strainer drafts at a few inches below surface where water is cleanest. (Note how hose weight tilts strainer while float remains level!)



★ SHALLOW DRAFT — FLOAT-DOCK drafts down to about 5 inches depth and still no whirlpool or loss of suction!

SEND for COMPLETE INFORMATION

Write your distributor or send direct to manufacturer for low prices and descriptive folder on FLOAT-DOCK. Be sure to give hose size.

Manufactured Only By
FOL-DA-TANK COMPANY
Box 361, Rock Island, Illinois

THE WATCH DESK

overhauling the firemanic news of the day

How False is a False Alarm?

Add this one to the nomenclature of false alarms.

As any good neighbor would, Mrs. Ruby Burkholder, of Santa Monica, Calif., promptly called the Fire Department when she heard the woman next door shout: "The house is on fire!"

Local fire fighters came sireening to the scene, stretched in and were quickly set to get to work on the "blaze."

A fire captain pounded on the door of Mrs. Burkholder's house. "Where's the fire?" he called.

"Fire? Why there's no fire here" responded the startled housewife.

"Omigoodness" she added, sheepishly, "I was trying to get my husband out of bed—he's a hard sleeper—and I finally yelled at him, 'the house is on fire'! but I had no idea the neighbors could hear me."

Rescue Acrobatics in Ansonia

An Ansonia, Conn., woman dropped her two children, one at a time, from a third floor fire escape of a burning building on February 22 to a man standing nine feet below. The mother was aroused by a family pet, a cocker spaniel, which perished in the fire. The blaze caused an estimated damage of $60,000, and left 25 persons homeless.

The fire burned out the two upper floors and a combination dwelling and restaurant in the business district of the city. The man, standing on the roof of an adjoining building, caught the infant boy and the three year old girl safely. The mother went down the fire escape and was later treated for face burns. The woman is Mrs. Eugene Stanley, 38, who lived on the top floor of the three-story frame dwelling. The man, Raymond Macowski, 35, is the son of the woman who owned the building.

The fire occurred in the same district which was swept by the flood of August 19, 1955.

Tom Magner

Police-Fire-Headache

Some of the complications of dovetailing duties of firemen and police were disclosed recently in action taken by Fire Chief George J. Young of the Bellefontaine, Ohio, Fire Department in suspending three city firemen (out of a total paid crew of six) for failing to monitor the police radio system and provide 24 hour control of the city's traffic lights.

The only light control box is located at fire headquarters. Previously, City Council had ordered the monitoring, following failure to approve installation of a dual control box.

One other city fireman was suspended earlier also for failing to monitor the system.

In order to augment his depleted force, Chief Young called in the auxiliary firemen.

Look Ma—No Parachute!

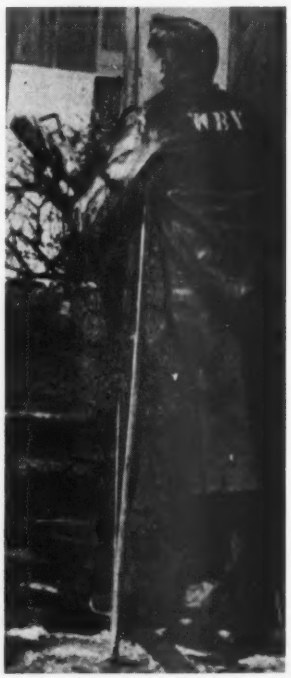
When his light plane caught fire in the air near Douglas, Georgia, crop-duster Pete Barnwell didn't let the lack of a parachute bother him. He steered the plane toward a local airport while standing on a wing strut.

When the fire became too hot outside the plane he jumped about 20 feet to the ground. His speed of about 50 miles per hour caused him to roll over five or six times. Receiving only scratches and bruises, he walked away from the scene. The plane was demolished.

"Down But Not Out"

Perhaps the chief of the Willoughby, Ohio, Fire Department thought he was short another vamp when Fireman Robert Fuller broke a bone in his left foot. Ordinarily that type of injury requires a period of convalescence before return to duty. However, brother Fuller didn't let this inconvenience bother him, but responded as if nothing had happened—*on crutches*. The day the photograph was taken he answered two alarms for working fires.

Thanks David E. Haine



Trouble Reigns as Bumbershoot Sails

This 'un comes from San Diego, Cal. It has to do with a patio umbrella belonging to Mrs. Adrinne Louis, that city, which had a brief but busy and disastrous career.

The umbrella sailed into the air when a gust of wind whipped it from its moorings in the center of a redwood table, burned down a garage and touched off a barrage when firemen arrived.

It happened this way:

The umbrella landed on a power line; the line short-circuited; the bumbershoot began to burn; falling embers set fire to bamboo and dry weeds; the fire spread to the garage; firemen were called; small arms ammunition stored in the garage began to explode; San Diego fire fighters arrived—and ducked!

Battalion Chief W. R. Eisele in command of three fire companies fought the fire.

Owner of the burned garage, Albert Jones, said the blaze destroyed over $3,000 worth of tools, fishing gear, cameras and camping equipment.

Judge Lowers Boom on Bomb Scarers

For two years Nassau County, L. I., has has been plagued with telephone bomb scares perpetrated by youthful hoaxers. Then on February 29, last, Judge James N. Gehrug of the County's Children's Court acted to stem the rash of bomb "falsies" after three Mineola High School students had been nabbed for taking part in bomb scare incidents.

The Judge issued a stern warning from the bench and made an example of the three youths to show he meant business. Any student found guilty of taking part in a bomb scare incident in the future, he declared, will be sent to Nassau County Children's Shelter for three weeks. If it's a second offense, the boy or girl will be sent to the state training school, he added. (That's a nice name for an institution for incorrigible youth.)

Then the Judge ruled the three smart alecs to be juvenile delinquents and sent to the shelter for three weeks to ponder their "cuteness."

Hot and Bothered Over Rats

This yarn involved another garage and a far-from-normal fire.

Out Minneapolis-way a woman called Fire Headquarters and told the dispatcher she was burning down her garage and would they be so kind as to send out a fire engine.

They did pronto; also, a man from the arson squad.

They arrived to find the garage blazing away nicely.

Questioning the owner, the arson investigator found she had been told to fumigate the building to rid it of rats.

She thought fumigate meant to burn it down.

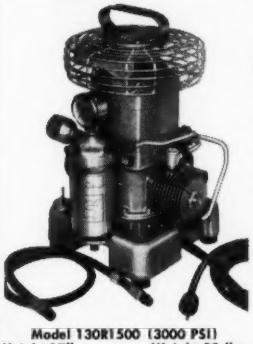
Tennyrate the rats were burned. Fire fighters also got a bit hot about the whole thing!

Thanks Gene Chapman

...in heaviest smoke and toxic gases...

BREATHE FRESH, PURE AIR!

Your best personal protection in atmospheres filled with deadly gases is fresh pure compressed air.



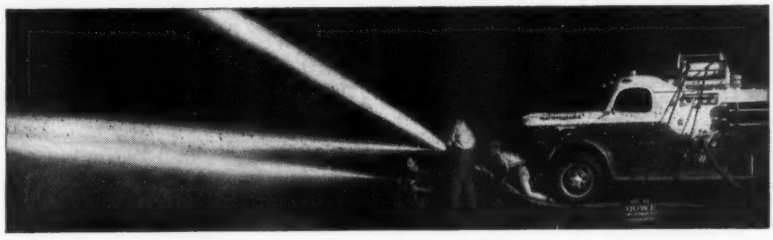
Cornelius

HIGH PRESSURE AIR COMPRESSORS AND AIR PURIFIER provide breathing quality "country fresh" air. Ask your distributor for a demonstration or write for *new* catalog and photo of a typical installation.

The Cornelius Company

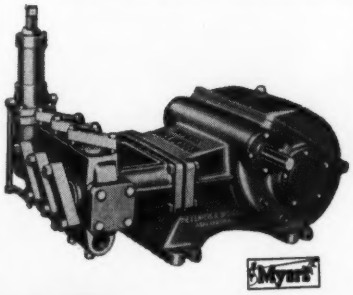
Model 130R1500 (3000 PSI) Height 17" Weight 38 lbs.

550—39th Avenue N. E. Minneapolis 21, Minnesota



Three Streams *at one time*

TWO HIGH-PRESSURE *and* ONE HIGH-CAPACITY



"Dual Fire Fighter" trucks, originated by Howe Fire Apparatus Co., mount a Myers Giant Bulldozer pump. It delivers 60 gpm. at a pressure of 800 psi. These high-pressure lines are backed up by a high-volume pump to make the right combination for fighting a wide variety of small fires.

Write today for details and a Myers Fire Pump Catalog

Myers PUMPS WATER SYSTEMS AND WATER SOFTENERS

The F. E. Myers & Bro. Co. • Ashland, Ohio

Boys Start Four-Alarm Fire

The City of Sacramento, Calif., had its first four alarm fire in 27 years on April 22, when five boys were playing on the second floor of the new Midtown Building now under construction.

As darkness came they made a torch out of a beer can, rope, and gasoline used in construction equipment. One can was kicked over and fire ignited cardboard boxes which the boys were using in playing fort. The youngsters tried to put out the fire but it was soon too big for them. Becoming scared, they hurried down the scaffold and ran up the alley in the rear of the building.

The new structure covers a quarter of a block at 21st & O Streets on a site from which many older two and three-story frame apartments are being removed from time to time, to be replaced by office buildings.

The first alarm was received by the fire alarm bureau at 7:27 p.m.; The second at 7:30 p.m.; and then third at 7:31 p.m. The latter signal (3-11) is a general alarm which calls all off-duty personnel for duty on standby equipment.

At 7:33 p.m. fire alarm operators heard the first 4-11 (fourth alarm) request in 27 years come over the department radio. The last such call said to have been sounded in 1929, when the Capitol Hotel was destroyed in downtown Sacramento.

Sparks born on the breeze started to drop over a seven-block area north of the blaze. The fire spread to the two-story frame building next to the new building, gutting the roof and top story; it then jumped to the next building. A two-story frame building across the alley was damaged but firemen kept the flames at this point from advancing south.

The new midtown branch of the Crocker-Anglo National Bank, located 100 feet across 21st street, was saved by fire fighters who played hose streams on it. However at one point the heat broke windows and set off the sprinkler system inside the bank.

Apparatus of one Sacramento engine company was reported to have been blistered by the heat and over 500 feet of hose was lost.

The Sacramento-Yolo County mutual aid program was placed into operation when Assistant Chief Peter Mangan, in charge of operations, requested additional help and coverage for Sacramento's eleven fire stations. Engine companies responded from American River, Hagginwood, Arden, Arcade Fire Districts and the city of North Sacramento. Some personnel from other districts came in without equipment. Other departments stood by in case of a greater mutual aid alarm.

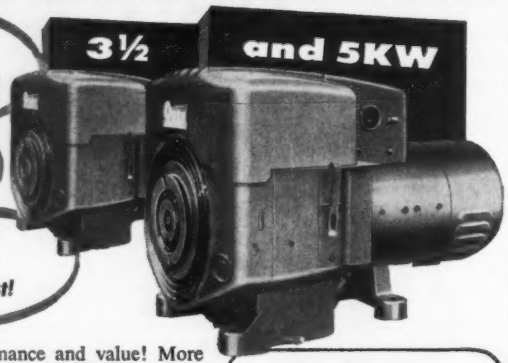
Four civilians were injured while trying to remove furniture from exposed structures in the same block as the Midtown Building. Three firemen received minor injuries.

New ONAN CCK Electric Plants

MORE OUTPUT *per pound of weight!*

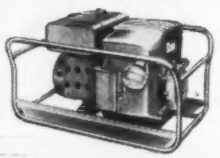
MORE OUTPUT *per gallon of fuel!*

MORE OUTPUT *per dollar cost!*



Way ahead in performance and value! More powerful, two-cylinder, air cooled Onan gasoline engines of 4-cycle, horizontally-opposed design give smooth, quieter, effortless performance. Short stroke and moderate speed cut engine wear, give longer life. Quality features include rotating Stellite-faced exhaust valves, solid Stellite valve seat inserts, full pressure lubrication. Onan's exclusive Vacu-Flo cooling system available for difficult or "buried" installations.

Completely Onan-built, with Onan gasoline engines direct-connected to Onan all-climate generators in compact, rugged units. Available in stationary, portable and standby models with a wide range of accessories.



PORTABLE MODELS
Available with carrying frames or 2-wheel dollies. Easily portable. Other Onan portable models: 500 to 10,000 watts.

Write for folder on all CCK models

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

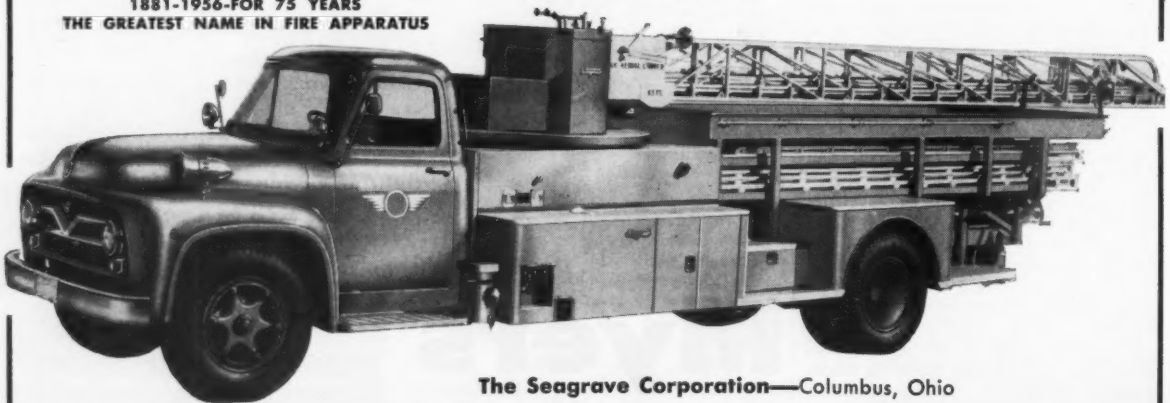
3026 University Avenue Southeast, Minneapolis 14, Minnesota

SEAGRAVE

1881-1956-FOR 75 YEARS
THE GREATEST NAME IN FIRE APPARATUS

COMMERCIAL AERIAL TRUCK

The Seagrave Commercial Aerial makes it possible for smaller cities and volunteer and industrial fire departments to have an all steel Seagrave Built Aerial Ladder at economical price.



The Seagrave Corporation—Columbus, Ohio

The Fire Alarm Bureau recorded the following alarms:

7:27 p.m.: Box alarm, 21st & O Streets
7:30 p.m.: 2-11, seconds alarm
7:31 p.m.: 3-11, third alarm (general)
7:33 p.m.: 4-11, fourth alarm
7:47 p.m.: Box alarm, 25th Street and Marshall Way (false alarm)
7:48 p.m.: Mutual aid request

The following roof fires were reported:

8:05 p.m.: 21st Street and Capitol Avenue
8:10 p.m.: 2110 J Street
8:27 p.m.: 21st and N Streets
8:29 p.m.: 2111 Capitol Avenue
8:45 p.m. 2101 I Street
9:05 p.m.: 2126 Capitol Avenue
9:36 p.m.: 2113 N Street
9:45 p.m. 1417 - 21st Street

Most of these roof fires were handled by mutual aid companies in conjunction with a Sacramento ladder company.

The Police Department reported the biggest traffic jam in the history of Sacramento, when people seeing the fire over 15 miles away, drove to the area. At one time traffic was blocked 10 blocks from the main blaze, preventing some fire equipment from responding to roof fires. However, as soon as all off-duty police officers reported for service, the traffic situation was put under control and some traffic tickets issued in the process.

Edward W. Gardiner

Handling Cotton Fires on Railroads

The Southern Pacific Railroad's early transportation experience with cotton was mostly of the export type known as "high density," which was handled in comparatively short hauls.

Starting in 1945, cotton was moved in longer hauls. This traffic was in compressed cotton in the "standard density" form.

Soon after this type of movement began, there was an increasing number of fires in closed cars; during 1953 the railroad experienced 83 cotton fires in cars originating on Southern Pacific's Lines.

To help solve the problem, the railroad called for assistance from Stanford Research Institute, and in February, 1954, the Institute scientists began an intensive and extensive study of the various possible causes of these fires.

The final report has not been concluded but two basic causes have emerged from the study as most probable. The first is friction of metal on metal and the second is friction of cotton on wood. It was found that in the friction of cotton on wood, the wood had a tendency to ignite first.

Several remedial suggestions have come from the research, some of which were applied immediately; however, other more extensive remedies will be announced for nationwide study by cotton and railroad officials, in the near future.

This research has also resulted in the development of a new method of extinguishing a cotton fire in a box car, whereby principles of extinguishment

OVER 100 GPH FOR EACH POUND OF PUMP
YET THIS FLOMAX-15 IS MADE OF TOUGH IRON FOR LONG LIFE
EASY TO HANDLE——WEIGHS LESS——COSTS LESS

FLOMAX Super Hard Seals provide longer trouble-free pump life without nuisance of filling grease cups or fear of dirty grease.
FLOMAX Open Adaptor construction protects your engine from stray pumpage. Also provides plenty of room to work and see when servicing pump.

FLOMAX pumps are	FLOMAX pumps have
Self-Cleaning	Replaceable Wear Plate
Non-Clogging	Removable Inlet and Outlet Flanges
Quick Priming	Higher Capacities and Higher Heads

Write for free folder!
MARINE PRODUCTS COMPANY
515 Lycaste Ave., Detroit 14, Michigan

BADGES

High quality badges and insignia—by one of the oldest firms in the field.
Write for circular.

EVERSON-ROSS
88 CHAMBERS ST.
NEW YORK 7, N. Y.

Morning Pride
NATURAL RUBBER

DULL FINISH NATURAL RUBBER ON HEAVY NAPPED FLANNEL
•
TOUGH-DURABLE-VERY SOFT AND PLIABLE
•
Free Literature Available

See Your Local Dealer or Write
MORNING PRIDE MFG. CO.
1986 HOME AVE., DAYTON 7, OHIO

WENTWORTH
"HEAD-MASTER"®
FIRE FIGHTERS
UNIFORM CAPS

"HEAD-MASTER" Styles include Bell tops, 8-Points, Air Force, Military Pershings, etc. Write for complete catalog.

All HEAD-MASTERS are made by Union Craftsmen with long, long, experience and know-how. All cloths are 100% wool, pre-shrunk and waterproofed. Only the finest standard materials are used.

This combination gives you the finest Uniform caps made anywhere.

For Styling, comfort, quality, and durability always specify HEAD-MASTER Uniform Caps and be sure of the finest. They are guaranteed unconditionally to give complete satisfaction.

Order Direct or thru your regular dealer.

Wentworth-Forman Co., Inc.
21A Edinboro St., Boston 11, Mass.

always **SPECIFY**

ATLAS

the world's best

LIFE NET

in use in thousands of departments—time tried and proven—as the best and fastest means of rescue. Patented self-locking hinges and shock absorbers.

Specify ATLAS LIFE NETS on all new apparatus!

ATLAS SAFETY EQUIPMENT CO., INC.
27 WARREN ST., NEW YORK 7, N. Y.

using the indirect method of attack are utilized. This method requires that side doors be kept closed and the fire extinguished by making a hole in the roof of the car for insertion and operation of a fog nozzle.

The fine spray from the fog nozzle smothers the fire and reduces the temperature within minutes after the attack is started. It was found by further experimenting that by adding a wetting agent, to the water tank on the fire truck, at a ratio of 1:600, faster extinguishment was obtained and the area of burn greatly reduced.

Prior to the development of this new method it was customary to isolate the car, gather the available fire protection equipment, open the doors and pull the burning bales onto the ground, while the fire was being fought at long range.

Regardless of the degree of fire intensity at time of discovery, the fire was automatically increased the moment the doors were opened and in many cases the fire damage was so great by the time the fire was extinguished, very little cotton could be salvaged—*Adapted from the Association of American Railroads News Letter of Dec., 1955.*

Salt Water Substitute for Blood Transfusion

The New York State Civil Defense Commission has announced that it is including, in its medical stockpile, kits containing measured amounts of sodium chloride, sodium citrate and containers for measured amounts of water. These kits will be used in the preparation of a saline solution for emergency treatment in preventing shock from burns. This method was discovered by chance in Lima, Peru, where it was found that the saline solution taken orally was about as good as blood, plasma and intravenous fluids in preventing shock.

Dr. T. Howard Clarke, Northwestern University surgeon, in reporting on this simple development, said that it would in effect make every burn patient his own doctor. The solution may be easily prepared by adding a teaspoonful of table salt and a teaspoonful of baking soda to a quart of water. Started immediately after the burn, the drink should be taken until all thirst is satisfied. If the thirst returns, more of the solution should be consumed. By following these instructions, the immediate need for transfusion should be virtually eliminated in those patients with less than fifty per cent total body surface burn.

Dr. Carl A. Moyer, School of Medicine, Washington University, St. Louis, Mo., who first advocated the use of saline solutions for treatment of burns, cautions against the use of such crude methods since the capacity of the teaspoon varies widely.

The original report on this method was presented during a symposium on burns sponsored by The National Research Council.

New York State C. D. News Letter

POWERFUL
but . . .
COMPACT

Consider the Wheat Spotlight for more power in a smaller package. ½-Mile Beam, 1,000-hour Black Rechargeable Battery.

For information or trial, write to:

KOEHLER MANUFACTURING COMPANY
HOWLAND PLACE
MARLBORO, MASSACHUSETTS

McINTIRE GATE VALVES

Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

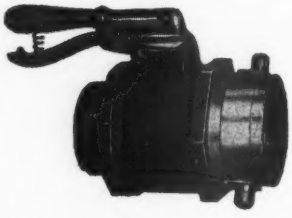


Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

F. N. McINTIRE BRASS WORKS
377 PUTNAM AVE., CAMBRIDGE 39, MASS.
1837 - - - - - - - - 1956

PYLE SIRENS

MODEL "7"

- MORE POWERFUL
- LESS CURRENT
- LIGHTER WEIGHT
- SMALLER SIZE

Write for BULLETIN No. 622

THE PYLE-NATIONAL COMPANY

WHERE QUALITY IS TRADITIONAL

1365 North Kostner Avenue, Chicago 51, Illinois

N-R-N-R-N-R-N-R-N-R

NIELSEN-RIONDA

Introduce their amazing new metal

STA-BRITE

The wonder metal! It polishes for a lifetime to a rich brilliancy and looks like 14K Gold. The entire badge throughout is made of STA-BRITE.

•

PLUS—all the advantages of superior durability and added beauty of the EXCLUSIVE NIELSEN-RIONDA solid flat back

PLUS—10 year guaranteed silver fused coat and cap attachments, center emblems and numbers

•

Assures you of the best badge values

•

Write for free 32 page catalog illustrating badges available in the new STA-BRITE as well as standard finishes

NIELSEN • RIONDA INC.

40 JOHN ST., NEW YORK 38, N. Y.

Chief G. A. Mitchell Treasurer of IAFC

Chief G. A. Mitchell, Opelika, Alabama, has been elected to fill the vacancy in the post of treasurer created by the death of Chief Daniel Tierney. The

Board of Directors of the International Association of Fire Chiefs selected Chief Mitchell from a group of four proposed candidates. He will serve an interim term until the regular elections are held at the annual convention in Miami next November.

Chief Mitchell received a majority vote of all the Board of Directors. The other candidates considered for the post were Chief Henry G. Thomas, Hartford, Conn.; Chief Elmer Stough, Lorain, Ohio, and Chief Edwin J. Clark, Wayne, Pa.

Milwaukee Revises Job Penalties

In January the Milwaukee Fire and Police Commission moderated the suspensions given two Milwaukee fire fighters by Chief Edward Wischer for working other jobs on off-days. The men appealed the suspensions of 90 days and 30 days respectively after Chief Wischer had checked income tax returns of firemen in 1954, but the suspensions were held up pending the appeal of one of the men to the courts questioning the validity of the city ordinance which banned firemen from holding outside jobs. The State Supreme Court, late in 1955, upheld the ordinance, as noted in FIRE ENGINEERING of December, 1955, and Chief Wischer then imposed the suspensions which began in January.

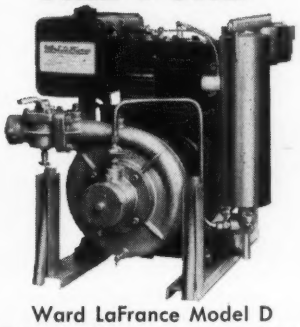
More than 100 persons attended the hearings on January 26 which resulted in the halving of the men's suspensions.

It was disclosed that one of the men, who had five children, had earned $5,846.76 working part-time for a building firm. An assistant city attorney said this fireman had made false reports of his income to the Milwaukee Housing Authority, enabling him to continue residence at a particular housing project.

Continued on page 545

Portable . . . light weight

FIRE PUMP



Ward LaFrance Model D

- Husky 8 ¼ H.P. Briggs & Stratton engine.
- Exhaust primer.
- Folding handles . . . permit easy carrying.
- Aluminum, light weight, corrosion resistant pump.
- Weighs only 130 pounds.
- Compact design . . . low price.

Ideal for emergencies, stand-by protection and hundreds of other uses.

Domestic & foreign distributors wanted.
Write today—

WARD LaFRANCE
INTERNATIONAL, INC.
Elmira, N. Y.
Cable Address: "WARDTRUCK"

BODY-GUARD

BUNKER SUITS

FOR COMFORT & PROTECTION

WE ARE DISTRIBUTORS FOR

SIREN BOOTS

We have been supplying **FIREMEN'S CLOTHING** for over 25 years.

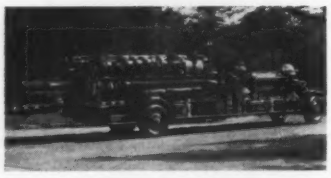
Any fireman can have a catalog by writing—

BODY - GUARD MANUFACTURING CO.
ST. JOSEPH - - - - MISSOURI

CLASSIFIED ADVERTISEMENTS

Rate $10 per column inch less 10% for three or more consecutive insertions. Closing date for copy, 25th of month preceding date of issue.

FOR SALE



1929 Ahrens-Fox Quad (Q unit) truck equipped with 750 G.P.M. piston pump, 80 gallon booster tank, 179 ft. asst'd ladders as follows: 24' wall, 30' wall, 40' ext. with poles, 50' ext. with poles, 35' extension. One 10' length 5" hard suction. Two soda and acid extinguishers. Asst'd pike poles. Misc. entry tools and lanterns. Paint and condition of truck good. This apparatus may be seen by appointment or phone

CHIEF WM. SHAY
ELMSFORD FIRE DEPT.
ELMSFORD, N. Y. LY 2-8383

FIRE PROTECTION SUPERVISORS

OVERSEAS employment opportunities in Middle East for qualified experienced fire masters. Minimum 10 years' experience in public or heavy industrial fire services required. Must be qualified to train personnel and maintain effective fire protection services.

Attractive salary—biennial home furlough—family housing available in reasonable period.

Write giving age, marital status, and details of previous experience.

BOX 308P — RADIO CITY STATION
NEW YORK 19, NEW YORK

FIRE APPARATUS SALESMAN

Nationally known manufacturer has opening in south east territory. Salesman with experience in this territory preferred. Write details to

T. H. JONES
780 Memorial Drive S.E.
Atlanta, Georgia

FIREFINDER FOR FIREFIGHTERS

Locates source of fires in partitions, under floors, etc., by making ½ inch opening. Saves damage and embarrassment. Carry like a fountain pen. Price only 4.95. Dealers Wanted.

FIREFINDER CO.
734 Magnolia St. Denver 20, Colorado

FOR SALE DEMONSTRATOR
1955 WILLYS SPECIAL HEAVY DUTY
4WD COMMANDO FIRE TRUCK

In case of no roads, snow and ice Willys 4WD will get there.

1955 Willys Special Heavy-Duty 4 wheel drive Commando Fire Truck, with Cab & Chassis, rated at 8000 pounds G.V.W. with heater and defroster. The same is equipped with the following: 500 G.P.M. front mount frost-proof approved pump, 150 gallon booster tank, one reel with 150 feet of hose and nozzle, axe, pike pole, crow bar, extension ladder, roof ladder, two lengths of suction hose, heat exchanger, siren, 360° roof light, two hose lights, hand lantern, four large compartments, and a hose bed for 1000 Ft. of 2½" hose.

Priced at $4500 F.O.B.
VALLEY FIRE TRUCK CO.
59 Tuscola Rd.
Bay City, Michigan

! FIRE HOSE SALE !

UNUSED SURPLUS

1½"x50' SJ CRL fire hose, unused but soiled	$. 26 ft. cpld.
2½"x50' SJ CRL fire hose, unused but soiled	$. 40 ft. cpld.

UNUSED & CLEAN FACTORY PACKED, GUARANTEED PERFECT

1½"x50' SJ CRL fire hose	$. 40 ft. cpld.
2½"x10' hard suction hose	14.50 lg. cpld.
¾" or 1"x50' Booster hose	.30 ft. cpld.
4"x16' DJ soft suction hose, w/4½", spigs. male & long handle female	16.50 . cpld.
Mechanical foam playpipes, Phomairo, less pickup tube (Worth $45.00)	8.00 ea.
Mechanical foam playpipes, Phomairo, complete with pickup tube (Worth $55.00). Our price only	15.00 ea.
2½" Siamese connections, plain, 1 male and 2 female, NST	4.75 ea.
2½" Brass double female connections, NST	5.95 ea.
1½"x12" Plain hose nozzles, brass, IPT	1.25 ea.
2½"x15" Plain hose nozzles, brass NST	4.25 ea.
1½" Fog nozzles, brass, 3 position, leading brands, NST or IPT	29.50 ea.

IMMEDIATE DELIVERY
ANY THREAD COUPLING CAN BE SUPPLIED ON HOSE LISTED

TOWSON HOSE & RUBBER CO.
104 WEST JOPPA ROAD
BALTIMORE 4, MD.
Phone VAlley 3-1672

2½" FIRE HOSE SALE

SPECIAL OFFER

Unused, clean, factory packed 2½"x50' SJ CRL fire hose, leading brands, guaranteed perfect, tested to 300 lbs.

ONLY $.55 Ft. cpld.

TOWSON HOSE & RUBBER CO.
104 WEST JOPPA ROAD
BALTIMORE 4 MD.
Phone VAlley 3-1672

CONVERT YOUR 6 VOLT SIRENS & BEACON RAY LIGHTS TO 12 VOLTS

Guaranteed work. $15.00 per unit F.O.B. Fort Myers, Fla.

BARGAINS in used sirens and beacon ray lights. 6 and 12 volts available.
For information write:

EDWIN R. JENNY
2024 Heitman St., — Phone Edison 4-2742
Fort Myers, Fla.

FOR SALE
1956 WILLYS SPECIAL HEAVY DUTY
FIRE TRUCK

In case of no roads, snow and ice Willys 4 wheel drive will get there.

1956 Willys Special Heavy-Duty Champion 4 wheel drive Fire Truck with Cab & Chassis, rated at 8000 pounds G.V.W. with heater and defroster and power brakes. The same is equipped with the following: 500 G.P.M. front mount frost-proof approved pump, 150 or 200 gallon booster tank, one reel with 150 feet of hose and nozzle, axe, pike pole, crow bar, extension ladder, roof ladder, two lengths of suction hose, heat exchanger, siren, 360° roof light, two hose lights, hand lantern, four large compartments, and a hose bed for 1000 Ft. of 2½" hose.

Priced at $5200 F.O.B.
VALLEY FIRE TRUCK CO.
59 Tuscola Rd.
Bay City, Michigan

TERRITORIES OPEN

Several choice territories are still available to qualified representatives to handle sales of Fire Trucks, Tankers, Emergency Cars, etc., manufactured by SHARPSVILLE STEEL FABRICATORS, INC., Sharpsville, Penna.

ANTIQUE FIRE APPARATUS
DEPICTED IN COLOR ON HEAVY ABSORBENT COASTERS

Assortment of 2 doz. $1.00 Ppd. 12 doz. only $4.00 Ppd. On lots of two gross or over, we can imprint your name or organization for $1.00 per gross extra. Lots of 6 gross imprinting is FREE. For your WIFE: Two beautifully framed matching 4 x 4 Fire MINIATURES. $2.00 Ppd.

HOBBY MATS
Box 145 Dept. F Balsam Lake, Wisc.

FIRE APPARATUS DEALERS AND SALESMEN

Some good territories open on the latest Resuscitator, Inhalator equipment. Also, accessories and Repairs. See our Ad on Page 464.

MIDWEST OXYGEN EQUIPMENT COMPANY
1664 WEST OGDEN AVENUE
CHICAGO 12, ILLINOIS

FOR SALE

One 600 gallon 1934 Seagrave Pumping Engine, excellent condition, powdered by Hercules 6 cylinder motor, 4 stage centrifugal pump.

BOROUGH OF HASBROUCK HEIGHTS, N. J.
c/o ROBERT I. RAFFORD, BOROUGH CLERK
MUNICIPAL BUILDING,
HASBROUCK HEIGHTS, N. J.

SPECIAL BINDERS SAVE YOUR COPIES

Every issue of FIRE ENGINEERING has something in it that you want to keep for future reference. If you have one of our standard handy binders, you will have every article at your fingertips and a complete yearly index of everything we have published. The binder holds 24 issues and two yearly indexes.

Price $3.00

BOOK DEPARTMENT

FIRE ENGINEERING
305 East 45th St., New York 17, N. Y.

FIREMEN—VOLUNTEERS—FIRE BUFFS

RADIO RECEIVER DESIGNED FOR YOU!

"FIRE-PAL" (7" x 10" x 5½")

"FIRE-PAL" is a supersensitive F.M. monitor radio receiver providing full coverage of all fire calls in 153.7-155 mc range.

Precision engineered for dependable and DRIFT-FREE reception. "Fire-Pal" contains 7 tubes plus rectifier, built-in antenna, 5" P.M. speaker and automatic squelch.

Easy to tune because 153.7-155 mc. range is spread out over entire dial face. It operates on any 110-120 Volts AC or DC supply.

Mail your order today. Money back guarantee if not fully satisfied within 30 days.

Cost **$37.50** post paid.

HARRON LABS.

42-10 220th St., Bayside 61, N.Y.C.

BEFORE

BUYING FIRE HOSE-

get the details on the extraordinary

"3450 STRIKE"

test of

BLAZE GUARD FIRE HOSE

• • •

WRITE—for the startling story!

• • •

BLAZE GUARD MFG. CO.

NORTH BERGEN
NEW JERSEY

Continued from page 543

The manager of the project said this fireman was paying the Housing Authority $25.00 a month in "back rent," the additional sum he would have had to pay if he had declared his total income in signing leases.

The fire fighter told the Commission: "I worked outside the department to take care of my family and feed them. I found I could not keep going on my fire department pay. I thought in my own mind the rule (forbidding outside employment) was not valid."

Chief Wischer, defending the 90-day suspension of this fireman, said: "This was an aggravated case. We require that the fire department rules and city ordinances be lived up to. Not only did the fireman work outside the department, but he made false statements to the Housing Authority.

The other fireman worked part-time at a lumber firm, earning a total of $1,915. He also worked for a building firm in the summer and fall, receiving $544.39 according to testimony. The city attorney recommended that the first fireman's suspension be reduced to 60 days and that the other fire fighter's 30-day suspension was reasonable.

The commission in executive session cut the suspension periods to 45 and 15 days respectively.

Nipped in the Bud

Fire prevention inspectors in Alexandria, Va., report that a potential hazard to the people of their city has been nipped in the bud.

On the afternoon of March 14, two inspectors on a routine inspection of a florist shop discovered the use of flammable artificial flowers. Employees were occupied with making floral wreaths, table center-pieces and corsages with the flowers.

After examining the questionable stock, a match flame test was made on the outside of the building and this confirmed the flammability of the material. As soon as the inspectors recited the local ordinance forbidding sale of this material and demonstrated its potential hazard with the flame test, the merchants readily agreed that these flowers were "too hot to handle." After notifying their fire prevention office and Chief Bernard J. Padgett, the neighboring jurisdictions of Washington, D. C., Arlington and Fairfax Counties were immediately advised of this hazardous situation, and working under mutual agreements, the materials were returned to the distributors for disposition.

A canvass of local shops revealed that preparation was being made especially for the Easter holiday and Mothers' Day. It was later determined that some of the flowers were manufactured in this country and some imported from Japan.

Subsequently it was further determined that the flammable flowers can be stored indefinitely, thus creating the problem of redistribution at a later time.

for the emergency you may encounter

Pocketaire **PORTABLE OXYGEN UNIT**

Now heart attack patients can be aided on the spot with oxygen from this compact, new inhalator. Just 17 inches high and weighing only 17 pounds, the **portable** Pocketaire simplifies all oxygen relief and rescue work . . . permits aid to be given on stretchers or in inaccessible areas.

Rate of flow is regulator-controlled . . . keeps within medically safe limits **automatically.** Two standard medical cylinders provide enough oxygen for up to one hour at high flow rate; up to two hours at moderate rate.

Write for free literature or demonstration.

THE CYCLE-FLO COMPANY

980 BRIDGEPORT AVE. • MILFORD, CONN.

Canada: Wilson & Cousins Co. Toronto, Ontario

Export: Ward LaFrance International Elmira, N. Y.

FIRE and POLICE UNIFORMS and ACCESSORIES

Dealers Inquiries Invited

Send for our latest Catalogues, Circulars and Samples of Materials

RUSSELL UNIFORM COMPANY NEW YORK

RUSSELL UNIFORM CO.
192 Lexington Ave., New York 16, N. Y.

Please send free catalog checked below.

☐ Fire Department Uniforms and Equipment

☐ Police Department Uniforms and Equipment

☐ Samples of Materials and..... Measurement Forms

Mr. .....

Address .....

City..... Zone.... State.....

HELMETS
BY
CAIRNS
IN TOP-GRAIN LEATHER

No. 5A
The "NEW YORKER"
REGULATION

No. 550
The "SEAMLESS"
DROP BRIM

IN ONE-PIECE ALUMINUM

No. 350
The "SENATOR"
REGULATION

No. 710
The "STREAMLINER"
DROP BRIM

IN "FLINT-FLEX" PLASTIC

No. 900
The "CLIFTON"
REGULATION

No. 725
The "CAVALIER"
DROP BRIM

We can supply everything the fireman needs for his personal equipment. Write for Catalog 351.

CAIRNS & BRO., Inc.—Allwood, Clifton, N. J.

SINCE 1836

ADVERTISING INDEX

FIRE ENGINEERING

JUNE, 1956

	Page
A & W Specialty Co.	533
Akron Brass Mfg. Co., Inc.	509
American District Telegraph Co.	476
American Fire Apparatus Co.	471
American Fire Equipment Co.	535
Ansul Chemical Co.	466
Atlas Safety Equipment Co., Inc.	542
Audio Equipment Co., Inc.	500-501
Bar-Way Mfg. Co.	512
Bean Div., John; Food Machinery & Chemical Corp.	454
Beck Co., C. D.	465
Bi-Lateral Fire Hose Co.	458
Blackinton & Co., Inc., V. H.	519
Blaze Guard Mfg. Co.	545
Body Guard Mfg. Co.	543
Brady Co., Robert J.	520
Braxmar Co., C. G.	537
Buffalo Fire Appliance Corp.	521
Cairns & Bro.	546
Circul-Air Corp.	522
Cornelius Co., The	539
Cycle-Flo Co.	528; 545
Darley & Co., W. S.	524
Duo-Safety Ladder Corp.	475
DuPont De Nemours & Co., E. I.	462
E & J Manufacturing Co.	479
Eastman Co., Samuel	516
Electronic Protection, Inc.	517
Elkhart Brass Mfg. Co., Inc.	469
Emerson Co., J. H.	Inside Front Cover
Eureka Fire Hose; Div. of U. S. Rubber Co.	505
Everson-Ross, Inc.	541
Fabric Fire Hose Co.	453
Fairbanks, Morse & Co.	532
Federal Sign & Signal Corp.	451
Fol-Da-Tank Co.	538
Four Wheel Drive Auto Co.	Back Cover
Fulton Bag & Cotton Mills	510
Gamewell Co.	480
Goodrich Industrial Products Co., B. F.	455
Gorman-Rupp Co.	527
Hale Fire Pump Co.	531; 534
Hamilton Rubber Mfg. Corp.	529
Harodikes, Inc.	527
Harron Labs.	545
Hewitt-Robins, Inc.	472
Homelite Corp.	506
Howe Fire Apparatus Co.	459
Industrial Radio Corp.	514
Janesville Apparel Co.	537
Koehler Mfg. Co.	542
McIntire Brass Works, F. N.	542
Mack Manufacturing Corp.	463
Marine Products Co.	541
Maxim Motor Co.	477
Memco Aerial Ladder Co.	534
Midwest Oxygen Equipment Co.	464
Midwestern Safety Mfg. Co.	468
Mine Safety Appliances Co.	457
Morning Pride Mfg. Co.	541
Motorola, Inc.	461
Mueller Co.	536
Myers & Bro. Co., F. E.	539
National Foam System, Inc.	523
Nicerol Limited	460
Nielsen-Rionda, Inc.	543
Onan & Sons, Inc., D. W.	540
Parco Products	518
Pirsch & Sons Co., Peter	Inside Back Cover
Plectron Corp.	531
Powhatan Brass & Iron Works	526
Pyle-National Co.	543
Quaker Rubber Corp., Div. H. K. Porter Co.	474
Republic Rubber Div., Lee Rubber & Tire Corp.	470
Rockwood Sprinkler Co.	456
Russell Uniform Co.	545
Scott Aviation Corp.	513
Seagrave Corp.	532; 536; 540
Service Belt Co.	530
Sireno Co., Inc.	537
Smith & Co., D. B.	515
Sterling Siren Fire Alarm Co., Inc.	533
Super-Vacuum Mfg. Co.	535
W-B Manufacturing Co.	525
Ward LaFrance Truck Corp.	467; 543
Waterous Company	511
Waukesha Motor Co.	473
Wentworth-Forman Co.	542

Page
... 533
... 509
... 476
... 471
... 535
... 466
... 542
500–501
... 512
... 454
... 465
... 458
... 519
... 545
... 543
... 520
... 537
... 521
... 546
... 522
... 539
28; 545
... 524
... 475
... 462
... 479
... 516
... 517
... 469
Cover
... 505
... 541
... 453
... 532
... 451
... 538
Cover
... 510
... 480
... 455
... 527
1; 534
... 529
... 527
... 545
... 472
... 506
... 459
... 514
... 537
... 542
... 542
... 463
... 541
... 477
... 534
... 464
... 468
... 457
... 541
... 461
... 536
... 539
... 523
... 460
... 543
... 540
... 518
Cover
... 531
... 526
... 543
... 474
... 470
... 456
... 545
... 513
; 540
... 530
... 537
... 515
... 533
... 535
... 525
; 543
... 511
... 473
... 542
NG

Photo Courtesy Milwaukee Sentinel

MODERN APPARATUS

For MODERN FIRE FIGHTING

When PIRSCH Custom-Built Pumpers are purchased, you receive *plus values* that assure top service for years to come. Such features include:

1–Automotive units that not only provide the required pumping reserves but additional road and traffic reserve factors as well . . .

2–Pirsch custom-built cabs that assure maximum protection for driver and crew from weather conditions as well as traffic hazards . . .

3–Modern fender styling that adds extra safety factors in addition to more usable compartment space . . .

4–Heavy gauge sheet metal in fabrication of Pirsch cabs, fenders, bodies, and other parts not only lends maximum protection to firemen but also assures longer life for the fire engine.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

ONLY $225.00* PER MONTH LEASES THIS FWD PUMPER

Ask to have an FWD Pumper demonstrated in your community

Now you can have this bigger, safer FWD pumper right away! No need to go through the lengthy process of increasing legal debt limits . . . holding a bond referendum vote . . . or waiting for budget appropriations. Under FWD's exclusive leasing arrangement, your community can enjoy the protection it needs, quickly, for only $225* per month. (Shorter lease terms can be arranged for communities where regulations require it.) This FWD unit is equipped to meet Standard Fire Underwriter's Specifications. Any optional equipment you want can be included in the lease price. Contact FWD today!

*Varies depending on size of pumper, optional equipment and freight.

Here's your chance to give your community America's finest and safest fire fighting equipment, right away, for only a modest amount each month.

For a complete description of FWD's exclusive lease plan . . . Send coupon to—

THE FOUR WHEEL DRIVE AUTO COMPANY
Clintonville, Wisconsin

Please send copy of your fire engine lease plan

NAME _____

TITLE _____

COMMUNITY _____

COUNTY _____ STATE _____

FWD
America's Safest Fire-Fighting Apparatus

THE FOUR WHEEL DRIVE AUTO COMPANY • **Clintonville, Wisconsin** • *Canadian Factory* • KITCHENER, ONTARIO

H

R

Y

ARIO